# THE OIL WEEKLY

ENGINEERING « NEWS » STATISTICS

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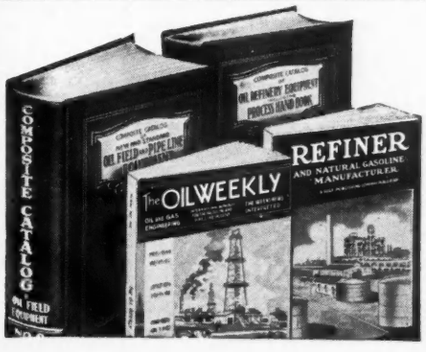



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## The Oil Man's Calendar

| | |
|---|---|
| **FEB.** | |
| **13–16** | **American Institute of Mining and Metallurgical Engineers, Annual Meeting, New York.** |
| **23–25** | **American Society of Mechanical Engineers, New Orleans, Louisiana.** |
| **23–25** | **Louisiana Engineering Society, New Orleans, Louisiana.** |
| **MAR.** | |
| **16–17** | **Southwestern District, American Petroleum Institute, Division of Production, Plaza Hotel, San Antonio, Texas.** |
| **22–24** | **American Association of Petroleum Geologists, Skirvin Hotel, Oklahoma City, Oklahoma.** |
| **APR.** | |
| **3–7** | **American Chemical Society, Baltimore, Maryland.** |
| **13–14** | **National Petroleum Association, Cleveland, Ohio.** |
| **24–29** | **Oil-World Exposition, Houston, Texas.** |
| **MAY** | |
| **3–5** | **Petroleum Electric Supply Association, Houston, Texas.** |
| **3–5** | **Petroleum Industry Electrical Association, Houston, Texas.** |
| **3–5** | **Natural Gasoline Association of America, Tulsa, Oklahoma.** |
| **15–18** | **American Petroleum Institute, Mid-Year Meeting, New Orleans, Louisiana.** |
| **JUNE** | |
| **15–16** | **Pennsylvania Grade Crude Oil Association, Hershey, Pa.** |

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# This Week's Panorama

THE oil industry remains in a generally satisfactory statistical position, although the latest weekly figures indicated a sharp and undesirable increase of refinery runs and an accompanying addition of a million barrels of gasoline to storage.

### Larger Runs Swell Gasoline Stocks

United States crude oil production in the week ended December 17, averaging 3,276,300 barrels daily, was about 30,000 barrels higher than in the previous week but still 30,000 barrels daily below indicated market demand for current output, as estimated by the Bureau of Mines for December. The new production rate was 4.7 percent lower than that in the corresponding week last year.

Average daily crude runs to refinery stills were increased 95,000 barrels, to 3,245,000 barrels daily, in the week ended December 17, and were nearly 1 percent higher than in the like week last year.

Whereas gasoline stocks had been reduced in the previous week, they were increased approximately 1,000,000 barrels in the week ended December 17, to a total of 69,635,000 barrels. At that level, they were 5 percent higher than one year previously.

Demand for light fuel oil continues seasonally large, and further inroads into storage are being made. Gas and fuel oil stocks were reduced over 2,000,000 barrels in the week ended December 17.

### General Business Situation Favorable

Confidence in the general business future is being voiced in nearly all industries and among economists and government officials. It is generally agreed that favorable conditions may be reasonably expected well into 1939, and many are of the opinion that the current recovery may proceed without serious interruption for two years or so.

The Bureau of Agricultural Economics, widely respected for its usually accurate forecasts, recently predicted a continued rise in consumer demand the next few months even if there is not any further increase in industrial activity, a possibility noted as having been to some extent evidenced in a year-end leveling off in certain business barometers. The bureau said that automobile and steel operations appeared to be approaching the limits of expansion, with little further increase likely for several months. Car loadings have seasonally declined and probably will not increase until the middle of January.

The Federal Reserve Board recently estimated that industrial production rose in November above the 1923-1925 average for the first time since October, 1937. The index, thus back up to 100 in November, had been at 96 in October.

Steel mills operated at 58 percent of capacity in the week ended December 19, compared with 60 percent in the previous week and 27 percent in the corresponding week of 1937. Electric power production is running about 5 percent higher than at this time last year. Expenditures for all types of construction in 1938 are estimated at approximately $8,800,000,000, the largest amount since 1930. Industrial stock prices now are around 20 percent higher than a year ago.

### Reduction of California Output Sought

Special efforts are being made in California to bring about greatly needed curtailment of crude production, although voluntary proration, the state's only control, has never been more than partially successful.

Independent operators recently met in Los Angeles in large number and indicated that they would cooperate toward actually reducing production to the 615,000 barrels a day which was set by the Central Committee of California Oil Producers as the limit for December. The state has been exceeding that amount by about 50,000 barrels daily.

It was indicated that the cooperative efforts likely would actually result in some lowering of the California output.

However, it is not indicated that the state's production will be reduced sufficiently to eliminate additions to storage, which have been under way for about two years.

Even if the production were cut down 50,000 barrels to the prescribed 615,000 barrels per day, it would be about 25,000 barrels a day above the indicated market demand for current production as estimated for December by the Bureau of Mines.

In the week ended December 17, according to the American Petroleum Institute, California production averaged 670,900 barrels daily, which was 55,900 barrels a day more than the official proration allowable and 81,200 barrels a day more than the indicated December demand of 589,700 barrels daily.

It is widely recognized that California's over-production may lead not only to serious market difficulties but also to formidable agitation for the inauguration of either state proration or federal regulation.

### Better Heavy Fuel Markets Promised

Although demand for the heavier fuel oils has not yet materially improved, it is generally expected that consumption will expand, as the business recovery progresses.

Consequently, the markets for those oils have appreciably strengthened, and it is being predicted that prices will soon show improvement.

In recent weeks the demand from steamship lines

has been especially large, because of Christmas trade and the lower duties applying under the recently signed trade treaty with Great Britain.

Stocks of residual fuel oils, totaling about 117,000,000 barrels, are about 15,000,000 barrels higher than at this time last year, but they are being liquidated at the rate of nearly a million barrels a week, and it is believed that if the business recovery proceeds, surplus supplies will be largely eliminated by the middle of 1939.

### Railroads May Use More Oil

The oil industry possibly will eventually gain some additional business in heavy oils from efforts now being made by the railroad equipment industry to stimulate purchases of locomotives and other equipment by the railroads. The railways are important users of fuel oil, and they probably will be even better customers if and when they acquire new equipment, as oil burning locomotives are in high favor.

The manufacturers of locomotives are offering their equipment now on unusually attractive sales terms, being willing to accept as little as 1½ percent of the price as down payment, with subsequent payments broadly amortized. In effect, the manufacturers are offering to practically give the equipment away and to let it pay for itself in the economies afforded. These attractive terms likely will stimulate important business, just as the easy lending policies now prevalent in the construction field have increased building.

## Gasoline Situation Impaired

THE latest weekly statistics of the oil industry indicated that the gasoline situation was somewhat impaired, rather than improved. Refiners materially increased their crude runs to stills, and at the new operating levels were headed toward an excessive gasoline inventory situation for the beginning of spring. Gasoline stocks immediately reflected the increased refinery runs, having risen a million barrels within the week.

The accompanying chart shows in red the current trends of refinery runs and gasoline stocks. In the week ended December 17 the crude runs to refinery stills were increased 95,000 barrels to a new average of 3,245,000 barrels daily, and gasoline stocks rose from 68,587,000 to 69,635,000 barrels, after having been on a down-trend the previous week.

In addition to the latest information on refinery runs and gasoline inventories, the chart shows, by means of the red dots and the horizontal, red "goal" line, how well the runs are being regulated.

The economically desirable level for gasoline inventories next March 31 has been estimated at about 82,300,000 barrels, and it has been calculated that the achievement of that goal would require restriction of refinery runs to a cumulative daily average of 3,100,000 barrels for the whole fall-winter season, or for the six months, from October 1, 1938, to March 31, 1939.

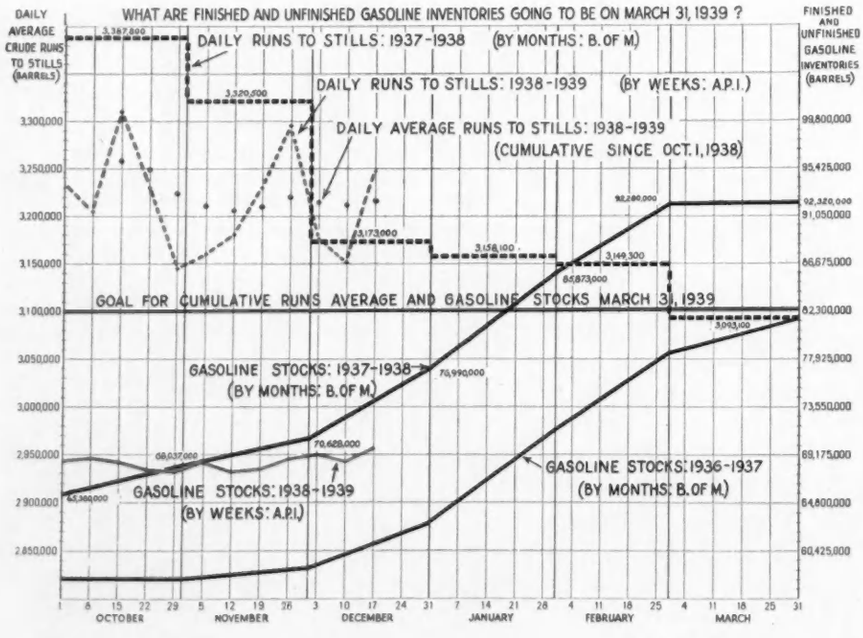
At the end of each week the cumulative daily average is re-figured and indicated by a new red dot. If refinery runs are reduced, the industry is working toward the desired spring inventory position for gasoline, and if they are increased, it is working away from the goal. And the red dots accordingly move toward or away from the red "goal" line.

The sharp increase of refinery runs in the week ended December 17 pulled the cumulative daily average up to 3,211,400 barrels from 3,208,000 a week previously, and former progress of the red dots toward the goal line was interrupted.

The chart is so designed that each red dot indicates, by reading the scale on the right side, the gasoline inventory level toward which the industry has been moving in the period from October 1 to the date of the dot. Thus up to December 17 the runs have been at an average level which if extended to March 31 would result in a supply at that time of about 92,000,000 barrels of gasoline, instead of the desired 82,300,000 barrels.

Summed up, the red dot for the week ended December 17 tells the whole story. It indicates that the refining division, by sharply increasing crude runs during the week, impaired the gasoline situation and pointed gasoline inventories toward a March 31 position of 10,000,000 barrels too high.

This chart was prepared by Fred Van Covern, economist for the American Petroleum Institute, and it was originally presented for public consideration at the December 12, 1938, proration hearing of the Texas Railroad Commission. It is now being brought up to date each week by THE OIL WEEKLY, for publication in these columns.


WHAT ARE FINISHED AND UNFINISHED GASOLINE INVENTORIES GOING TO BE ON MARCH 31, 1939 ?
DAILY AVERAGE CRUDE RUNS TO STILLS (BARRELS)
FINISHED AND UNFINISHED GASOLINE INVENTORIES (BARRELS)
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DAILY RUNS TO STILLS: 1938-1939 (BY WEEKS: A.P.I.)
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GASOLINE STOCKS: 1936-1937 (BY MONTHS: B. OF M.)
OCTOBER
NOVEMBER
DECEMBER
JANUARY
FEBRUARY
MARCH

# Oil Consumption Prospects For 1939 Promising

**New all-time peaks are indicated for coming year in demand for gasoline and some other petroleum products . . . Several records being set in 1938**

By L. J. LOGAN, Associate Editor

CURRENT estimates of demand for oil in 1939 indicate that some new all-time records will be established during the year.

Total demand for all United States oils in 1938 will closely approximate the all-time peak reached in 1937, and it is quite conceivable that the 1937 record will be somewhat exceeded in 1939. For domestic consumption of most products is again on the uptrend, although exports are expected to be around 15 percent smaller in 1939 than in 1938.

## First 10 Months

In the first 10 months of 1938 the total demand for United States oils was only 1.9 percent smaller than in the comparable period of 1937, and 1938 as a whole likely will be even closer to the 1937 record.

The total domestic demand for petroleum products, however, will not be quite as large in 1938 as in 1937, having run 4.2 percent lower this year than last year for the first 10 months. By the end of the year, nevertheless, the comparison likely will be a little more favorable for 1938.

## Gasoline Use at Peak

Even in 1938 new records are being set in consumption of some petroleum products. Including exports, gasoline demand will be a little larger for 1938 than for 1937, the best year on record up to now. The domestic demand for gasoline was ½ of 1 percent smaller in the first 10 months of 1938 than in the similar period of 1937, but for this year as a whole probably will be practically the same as in 1937.

Expected increases of sales of new automobiles being taken into consideration, it is estimated currently that domestic demand for gasoline in 1939 will be around 4 percent larger than for 1938 and thus at a new all-time peak.

In its monthly forecast of demand for petroleum, issued last week, the Bureau of Mines estimated that the domestic demand for motor fuel would amount to 36,230,000 barrels in January, 1939, or 3 percent more than the actual demand in January of 1938. The bureau stated that some economists predicted gains as high as 6 percent for January, largely because of the business recovery, but that such material increases were not indicated by October and November figures, the latest available.

## Kerosene Sets Record

Definitely at a new record level this year is the consumption of kerosene. In the first 10 months the domestic demand for kerosene ran 3.1 percent higher than last year.

Similarly, the lighter fuel oils are in greater demand this year than ever before. For the first 10 months of 1938 the domestic demand for gas oil and distillate was a fraction of 1 percent larger than in the similar period of last year. But the year to year increase is due to be larger for 1938 as a whole.

Asphalt also is in unusually good demand this year. The domestic requirements were 10.4 percent larger this year than last year for the first 10 months, and in October the demand was 23.3 percent larger than a year previously.

Road oil consumption in the United States has been only about 1 percent smaller this year than last year, on the basis of the initial 10 months, and October showed a 33.4 percent increase over that month of last year.

## Heavy Fuels Lag

Largely responsible for the overall decline in domestic demand for

### Bureau of Mines Forecasts Reflect Trends of Demand

| MONTH | Total Demand for Domestic Crude | MOTOR FUEL DEMAND | | |
|---|---|---|---|---|
| | | Domestic | Export | Total |
| **August:** | | | | |
| August, 1938, forecast | 106,580,000 | 50,000,000 | 4,500,000 | 54,500,000 |
| August, 1937, actual | 113,148,000 | 49,597,000 | 3,771,000 | 53,368,000 |
| Change from year ago | —5.8% | +0.8% | +19.3% | +2.1% |
| **September:** | | | | |
| September, 1938, forecast | 103,330,000 | 47,000,000 | 4,400,000 | 51,400,000 |
| September, 1937, actual | 110,962,000 | 47,245,000 | 4,456,000 | 51,701,000 |
| Change from year ago | —6.9% | —0.5% | —1.2% | —0.6% |
| **October:** | | | | |
| October, 1938, forecast | 104,370,000 | 45,800,000 | 4,400,000 | 50,200,000 |
| October, 1937, actual | 111,984,000 | 45,361,000 | 3,830,000 | 49,191,000 |
| Change from year ago | —6.8% | +1% | +14.9% | +2.0% |
| **November:** | | | | |
| November, 1938, forecast | 101,740,000 | 42,700,000 | 3,800,000 | 46,500,000 |
| November, 1937, actual | 107,264,000 | 42,666,000 | 3,309,000 | 45,975,000 |
| Change from year ago | —5.5% | —0.1% | +14.8% | +1.1% |
| **December:** | | | | |
| December, 1938, forecast | 102,480,000 | 40,100,000 | 3,300,000 | 43,400,000 |
| December, 1937, actual | 106,921,000 | 39,465,000 | 2,442,000 | 41,907,000 |
| Change from year ago | —4.2% | +1.6% | +35.1% | +3.6% |
| **January, 1939:** | | | | |
| January, 1939, forecast | 101,390,000 | 36,230,000 | 3,400,000 | 39,630,000 |
| January, 1938, actual | 104,619,000 | 35,176,000 | 3,090,000 | 38,266,000 |
| Change from year ago | —3.1% | +3% | +10% | +3.6% |

petroleum products this year has been the comparatively low consumption of heavy, industrial fuel oils and of lubricants, due to the business recession of the fore part of the year. In recent months, however, the demand for these products has been improving.

The domestic demand for residual fuel oils was 13 percent smaller in the first 10 months of 1938 than in the corresponding period of 1937, and a similar decrease of 10.6 percent was recorded for lubricants. The declines for wax and coke were 4.8 and 7.1 percent, respectively.

In October, 1938, the domestic demand for residual fuel oils was only 4.6 percent lower than in October, 1937, while the requirements for lubricants were similarly down 11 percent.

The above figures on demand are based on the monthly petroleum statement of the Bureau of Mines, covering October and the first 10 months of 1938.

## Improvement in October

That the oil demand situation in general is improving is evidenced in the bureau's figures for October. They indicate that total demand for United States oils in October, 1938, was 3/10 of 1 percent larger than in October, 1937, with domestic use up 2/10 of 1 percent, crude oil exports up 2.1 percent, and refined product exports down 3/10 of 1 percent.

Especially encouraging was the gain in domestic demand over the level of October, last year, as the domestic consumption had been running consistently below the 1937 levels in earlier months.

The products that were in greater domestic demand in October, 1938, than in October, 1937, included gasoline, kerosene, gas oil and distillate, asphalt, and road oil. But still in smaller use than last year were residual fuel oils, lubricants, wax, and coke.

## Gasoline Outlook

The estimate of a 4 percent larger domestic consumption of gasoline in 1939 than in 1938 is concurred in by several qualified economists.

It is based on various factors, including the upward trend of general industrial production and the indications that around 3,000,000 new automobiles, trucks, and tractors will be sold in 1939, compared with about 2,250,000 in 1938. If this estimate of automobile sales is fulfilled, there will likely be a net gain of about a million cars in use during the year, making allowance for those scrapped or replaced. Furthermore, the trend of gasoline consumption per vehicle per year is upward, and this trend perhaps will be accentuated in 1939 by the anticipated business recovery.

## Heating Oils

Current estimates of about 15 percent more furnace oil used in heating homes this winter than last winter are based largely on the increased number of oil burner installations.

The number of home heating burners in use has nearly doubled in the past five years. It is indicated that this winter an average of about 1,690,000 of such burners will be in use, compared with 1,550,000 last winter.

Furthermore, the outlook for burning oil consumption is bright over the long-term future as well as the present winter, because of indicated further increases in oil burner installations. The F. W. Dodge Corporation about a week ago estimated an increase of 32 percent in 1939 in a grouping of all types of residential building, including one- and two-family houses, apartments, and hotels. Contracts for 1939 are expected to move up to about $1,300,000,000 from approximately $985,000,000 in 1938. Home building for owners' occupancy in 1939 is expected to be more active than at any other time since the depression. This outlook for construction indicates that exceptionally large numbers of new oil burners will be installed and that heating oil consumption will continue to increase materially.

## Industrial Oils

So far there has been a less pronounced improvement in demand for the heavier oils than for the lighter fuels. But the business recovery and increasing industrial production are to some extent stimulating consumption of the heavier oils, and more definite gains are expected for 1939.

The industrial fuels in recent weeks have moved into their strongest market position for a long time, as strength has developed at the primary Gulf Coast markets, while the incipient upward movement of prices has been encouraged by increasing tanker charter rates, with some scarcity of clean boats apparently developing.

## Oil Demand More Favorable in October

**(These figures on petroleum demand, in thousands of barrels, are from the Bureau of Mines)**

| ITEM | AUGUST COMPARISON | | | SEPT. COMPARISON | | | OCTOBER COMPARISON | | | YEARLY COMPARISON | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | August, 1937 | August, 1938 | Percent Change | Sept., 1937 | Sept., 1938 | Percent Change | Oct., 1937 | Oct., 1938 | Percent Change | First 10 Mos., 1937 | First 10 Mos., 1938 | Percent Change |
| **Total Demand** | 119,537 | 119,902 | + 0.3 | 119,043 | 110,441 | — 7.7 | 116,782 | 117,141 | + 0.3 | 1,114,471 | 1,093,577 | — 1.9 |
| **Exports:** | | | | | | | | | | | | |
| Crude petroleum | 7,423 | 7,003 | — 5.6 | 6,602 | 5,577 | —15.5 | 6,640 | 6,780 | + 2.1 | 55,473 | 66,787 | +20.3 |
| Refined products | 10,352 | 10,763 | + 4.0 | 10,349 | 9,487 | — 8.3 | 9,419 | 9,388 | — 0.3 | 88,715 | 96,935 | + 9.3 |
| **Domestic Demand:** | | | | | | | | | | | | |
| Motor Fuel | 49,597 | 50,459 | + 1.7 | 47,515 | 46,058 | — 3.1 | 45,446 | 46,272 | + 1.8 | 437,169 | 435,017 | — 0.5 |
| Kerosene | 3,667 | 4,292 | +17.0 | 4,397 | 4,187 | — 4.8 | 4,985 | 5,185 | + 4.0 | 42,847 | 44,170 | + 3.1 |
| Gas oil and distillate | 7,197 | 7,737 | + 7.5 | 8,672 | 8,627 | — 0.5 | 9,939 | 10,089 | + 1.5 | 89,374 | 89,436 | + 0.06 |
| Residual fuel oils | 26,259 | 23,775 | — 9.4 | 26,408 | 23,082 | —12.6 | 26,913 | 25,666 | — 4.6 | 271,672 | 235,242 | —13.4 |
| Lubricants | 1,924 | 2,002 | + 4.0 | 1,968 | 2,127 | + 8.1 | 2,028 | 1,805 | —11.0 | 19,791 | 17,682 | —10.6 |
| Wax | 84 | 81 | — 3.6 | 84 | 69 | —17.8 | 85 | 72 | —15.3 | 906 | 862 | — 4.8 |
| Coke | 476 | 473 | — 0.6 | 586 | 636 | + 8.5 | 706 | 442 | —37.4 | 4,912 | 4,563 | — 7.1 |
| Asphalt | 2,783 | 3,201 | +15.0 | 2,913 | 3,017 | + 3.6 | 2,190 | 2,701 | +23.3 | 19,607 | 21,654 | +10.4 |
| Road oil | 1,590 | 1,581 | — 0.6 | 974 | 1,098 | +12.7 | 529 | 706 | +33.4 | 7,444 | 7,379 | — 0.9 |
| Still gas | 5,653 | 5,753 | + 1.8 | 5,574 | 5,287 | — 5.1 | 5,453 | 5,356 | — 1.8 | 54,063 | 52,394 | — 3.1 |
| Miscellaneous | 180 | 158 | —12.2 | 218 | 131 | —39.9 | 193 | 149 | —22.7 | 1,949 | 1,487 | —23.7 |
| Losses | 2,352 | 2,624 | +11.6 | 3,383 | 1,058 | —68.7 | 2,256 | 2,530 | +12.1 | 20,549 | 19,969 | — 2.8 |
| Total domestic demand | 101,762 | 102,136 | + 0.4 | 102,692 | 95,377 | — 7.1 | 100,723 | 100,973 | + 0.2 | 970,283 | 929,855 | — 4.2 |

# *Analysis of Oklahoma City's Ten-Year Recovery of Value*

**Record shows deep, expensive fields will pay out, and that less densely drilled areas can recover as much oil as those with more wells**

ON December 4, 1938, the Oklahoma City pool was 10 years old, having established during that period a record as one of the great high-gravity oil fields. Despite its having delivered an estimated 436,000,000 barrels of 38 to 39-gravity oil to the surface, it remains an important factor in the northern Mid-Continent crude oil market with a monthly average production only slightly below 3,000,000 barrels. The outstanding recoveries from individual wells and leases form the basis of an interesting study in the economics of well spacing. Also, the effects of governmental restrictive measures upon the development plan and upon pressure decline and ultimate recovery, could profitably be studied by companies anticipating the development of similar structures and by state regulatory bodies whose duties most certainly should be concerned primarily with the conservation of natural resources. It is with these factors that the following discussion will be concerned.

As constituted today, the Oklahoma City pool covers an area approximately 11 miles long and 3½ miles wide and includes approximately 13,000 productive acres. A total of 1452 wells have produced either oil or gas or both. Of this number, 135 wells either produced large volumes of gas with small amounts of oil originally or have been plugged back to upper gas horizons, and 331 wells have been plugged for abandonment, leaving a total of 986 producing oil wells. This figure includes about 40 wells which are not carried on the corporation commission report and which probably will be abandoned before making any further production. Production is now being obtained from nine distinct formations, several of which contain more than one productive member. These are as follows:

| | |
|---|---|
| Pawhuska limestone | 3200 to 3600 feet |
| Carmichael-Endicott | 3950 to 4100 feet |
| Tonkawa Series | 4300 to 4750 feet |
| Layton Series | 4750 to 5250 feet |
| Oswego-Prue | 6030 to 6070 feet |
| Upper Simpson—being developed | |
| Wilcox sand | 6200 to 6500 feet |
| Lower Simpson | 6200 to 6500 feet |
| Arbuckle lime | 6150 to 6600 feet |

### Recovery Analysis

A tabulation was made to show the recovery from each quarter-section in the pool. This information covers 100 quarter-sections, and is presented in Table 1. In determining recovery per acre it was known that opinions would differ widely as to the drainage area and that any figure chosen would meet with some disapproval. The writer has chosen to include in most instances all the acreage which might form the drainage pattern of any quarter-section. The results, therefore, are believed to be conservative as regards recovery per acre, although they are higher than some of the figures obtained by competent students of the area and lower than others.

As development progressed northwestward from what is now the southern end of the pool, the area which now produces from Wilcox sand in Sections 22, 23, 26 and 27-11n-3w, was skipped in favor of the townlot acreage in what is now the north central part of the pool. This latter encroached upon the thickly populated southeastern residential section of Oklahoma City. With the high formation pressures already measured in the southern part of the pool it is not surprising that much concern was felt for the safety of life and property as activity was initiated within the townsite. This concern was greatly heightened by such wells as Mary Sudik 1 and several others which had broken out of control during the completion stage. The result of the public attitude was the establishment by the corporation commission of a zone which was called the U-7 Zone, to the north and west of which no drilling was to be permitted. The south line of this zone passed through what is now known to be the richest part of the Wilcox sand zone. Operators fortunate enough to own leases immediately adjacent to the line but on the south of it obtained certain advantages that have become more apparent as time has passed. After being moved northward several times the U-7 Zone was established on February 22, 1931, to include most of the south half of Section 34 and Section 35-12n-3w. No further appreciable extension was made of the zone until April, 1935. During this period of more than four years leases in the northern part of 11n-3w and in the southern part of 12n-3w, were permitted to drain from the area to the north. Original pressures in this part of the field were approximately 2600 pounds per square inch. After the U-7 Zone had been extended to its

## TABLE 1

### Oklahoma City Recoveries and Wells Drilled by Quarter Sections

| Quarter Section | Total No. Wells Drilled | Plug Back Upper Gas | Shut Down or Abnd. | No. Prod. Oil Wells | Estimated Recovery to December 1, 1938 | Estimated Average Recovery | | October, 1938 Production |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Per Well | Per Acre | |
| NE1-11-3 | 3 | 1 | 1 | 1 | 625,883 | 208,628 | 15,647 | 1,482 |
| NW1-11-3 | 23 | ... | 10 | 13 | 7,712,053 | 335,307 | 48,200 | 24,316 |
| SW1-11-3 | 21 | 3 | 10 | 8 | 6,509,255 | 309,965 | 40,683 | 6,102 |
| NE2-11-3 | 22 | 5 | 8 | 9 | 4,253,664 | 193,348 | 26,585 | 10,376 |
| NW2-11-3 | 51 | 7 | 20 | 24 | 24,715,891 | 494,318 | 154,474 | 33,509 |
| SE2-11-3 | 14 | 1 | 12 | 1 | 2,385,604 | 170,400 | 14,910 | 4,375 |
| SW2-11-3 | 33 | 4 | 23 | 6 | 3,856,819 | 116,873 | 24,105 | 3,934 |
| NE3-11-3 | 28 | ... | 1 | 27 | 29,439,138 | 1,051,393 | 183,994 | 155,213 |
| NW3-11-3 | 29 | ... | 11 | 18 | 18,078,253 | 623,388 | 112,989 | 66,611 |
| SE3-11-3 | 26 | 1 | 14 | 11 | 7,309,585 | 281,138 | 45,685 | 25,475 |
| SW3-11-3 | 20 | ... | 8 | 12 | 7,021,668 | 351,083 | 46,811 | 23,975 |
| SE4-11-3 | 2 | ... | 2 | ... | 133,260 | 66,630 | 6,636 | ..... |
| NE10-11-3 | 29 | 1 | 7 | 21 | 15,339,311 | 528,942 | 95,871 | 46,395 |
| NW10-11-13 | 39 | ... | 14 | 25 | 15,921,326 | 408,239 | 99,508 | 68,735 |
| SE10-11-3 | 24 | ... | 10 | 14 | 9,390,191 | 391,257 | 58,689 | 26,856 |
| SW10-11-3 | 21 | ... | 6 | 15 | 7,114,462 | 338,784 | 54,727 | 36,048 |
| NE11-11-3 | 14 | 3 | 5 | 6 | 2,020,929 | 144,352 | 12,631 | 5,423 |
| NW11-11-3 | 8 | ... | 6 | 2 | 606,683 | 75,835 | 3,792 | ..... |
| SE11-11-3 | 13 | 2 | 2 | 9 | 2,825,488 | 217,345 | 17,659 | 6,397 |
| SW11-11-3 | 8 | ... | 4 | 4 | 1,116,735 | 139,592 | 6,979 | 3,788 |
| SE1 and all 12, 13 and 14-11-3 | 143 | 50 | 25 | 68 | 33,994,987 | 237,727 | 20,235 | 70,173 |
| NE15-11-3 | 17 | ... | 8 | 9 | 5,681,857 | 334,227 | 35,512 | 46,171 |
| NW15-11-3 | 8 | ... | ... | 8 | 4,583,866 | 572,983 | 76,398 | 38,309 |
| SE15-11-3 | 24 | ... | 6 | 18 | 8,500,677 | 354,195 | 53,129 | 41,274 |
| SW15-11-3 | 9 | ... | ... | 9 | 3,632,764 | 403,640 | 60,546 | 25,907 |
| NE22-11-3 | 16 | ... | 3 | 13 | 2,471,736 | 154,483 | 15,448 | 17,118 |
| NW22-11-3 | 5 | ... | ... | 5 | 809,810 | 161,962 | 16,196 | 6,561 |
| SE22-11-3 | 53 | ... | 13 | 40 | 16,871,583 | 318,332 | 105,447 | 31,183 |
| SW22-11-3 | 18 | ... | 5 | 13 | 4,370,648 | 242,814 | 62,438 | 24,291 |
| NE23-11-3 | 9 | ... | 2 | 7 | 1,196,714 | 132,968 | 7,479 | 12,865 |
| NW23-11-3 | 5 | ... | 1 | 4 | 976,868 | 195,374 | 6,105 | 4,910 |
| SE23-11-3 | 8 | ... | ... | 8 | 1,907,311 | 238,414 | 12,715 | 10,742 |
| SW23-11-3 | 3 | 1 | ... | 2 | 451,392 | 150,464 | 3,762 | 422 |
| NE24-11-3 | 11 | 7 | 1 | 3 | 2,307,638 | 209,785 | 14,423 | 22,688 |
| NW24-11-3 | 11 | 2 | ... | 9 | 3,231,019 | 293,929 | 20,194 | 10,654 |
| SE24-11-3 | 12 | 5 | 2 | 5 | 2,034,270 | 169,522 | 12,714 | 15,597 |
| SW24-11-3 | 9 | ... | ... | 9 | 2,384,143 | 264,905 | 14,901 | 31,735 |
| NE25-11-3 | 12 | 4 | ... | 8 | 1,562,698 | 130,221 | 9,767 | 11,675 |
| NW25-11-3 | 9 | ... | ... | 9 | 2,167,824 | 240,869 | 13,549 | 13,938 |
| SE25-11-3 | 16 | ... | 2 | 14 | 2,643,575 | 165,223 | 16,522 | 14,024 |
| SW25-11-3 | 9 | ... | ... | 9 | 2,201,471 | 244,608 | 13,759 | 7,540 |
| NE26-11-3 | 2 | ... | ... | 2 | 103,156 | 51,578 | 645 | ..... |
| NW26-11-3 | 9 | ... | ... | 9 | 4,196,456 | 466,273 | 26,228 | 34,904 |
| SE26-11-3 | 5 | ... | ... | 5 | 2,459,261 | 491,852 | 16,395 | 564 |
| SW26-11-3 | 8 | ... | 2 | 6 | 1,988,935 | 248,617 | 15,299 | 10,585 |
| NE27-11-3 | 13 | ... | ... | 13 | 3,962,908 | 304,839 | 39,629 | 19,801 |
| NW27-11-3 | 1 | ... | 1 | ... | 91,913 | 91,913 | 9,191 | ..... |
| NE35-11-3 | 4 | ... | ... | 4 | 1,446,078 | 361,519 | 36,152 | 10,990 |
| NW35-11-3 | 1 | ... | ... | 1 | 73,651 | 73,651 | 7,365 | 1,112 |
| NE36-11-3 | 16 | ... | 2 | 14 | 4,066,533 | 254,158 | 25,416 | 6,084 |
| NW36-11-3 | 11 | ... | 2 | 9 | 2,929,190 | 266,290 | 24,406 | 9,649 |
| SE36-11-3 | 7 | ... | 2 | 5 | 1,811,994 | 258,856 | 25,886 | 4,598 |
| SW36-11-3 | 3 | ... | 1 | 2 | 1,013,310 | 337,770 | 33,777 | 394 |
| SW7-11-2 | 2 | ... | ... | 2 | 272,962 | 136,481 | 13,648 | 7,110 |
| NW18-11-2 | 4 | 3 | 1 | ... | 18,894 | 4,723 | 472 | ..... |
| SE18-11-2 | 2 | ... | 1 | 1 | 22,581 | 11,290 | 1,129 | ..... |
| SW18-11-2 | 8 | 2 | 4 | 2 | 1,364,060 | 170,507 | 17,050 | ..... |
| NE19-11-2 | 2 | ... | 1 | 1 | 287,925 | 143,962 | 14,396 | 1,580 |
| NW19-11-2 | 9 | 2 | 2 | 5 | 2,782,535 | 309,170 | 17,391 | 3,934 |
| SE19-11-2 | 8 | 2 | 5 | 1 | 1,852,250 | 231,530 | 23,153 | ..... |
| SW19-11-2 | 10 | 5 | 2 | 3 | 1,971,394 | 197,139 | 12,322 | 119 |
| SW29-11-2 | 2 | ... | 2 | ... | 14,209 | 7,104 | 710 | ..... |
| NE30-11-2 | 7 | 4 | ... | 3 | 1,229,868 | 175,124 | 17,512 | 3,184 |
| NW30-11-2 | 13 | 6 | 4 | 3 | 506,024 | 38,924 | 3,163 | 1,870 |
| SE30-11-2 | 10 | 5 | 1 | 4 | 446,944 | 44,694 | 3,192 | 6,603 |
| SW30-11-2 | 11 | ... | 1 | 10 | 2,873,269 | 261,206 | 17,958 | 41,894 |
| NE31-11-2 | 16 | ... | 9 | 7 | 4,539,603 | 283,726 | 28,372 | 22,079 |
| NW31-11-2 | 14 | ... | 1 | 13 | 3,887,462 | 277,676 | 24,297 | 7,752 |
| SE31-11-2 | 16 | ... | 6 | 10 | 5,330,395 | 333,150 | 33,315 | 10,685 |
| SW31-11-2 | 11 | ... | 2 | 9 | 5,435,935 | 494,176 | 41,815 | 35,656 |
| NW32-11-2 | 5 | 1 | 1 | 3 | 421,193 | 82,587 | 8,259 | 1,976 |
| SW32-11-2 | 7 | ... | 3 | 4 | 1,386,073 | 198,010 | 19,801 | 1,085 |
| NE6-10-2 | 5 | ... | 4 | 1 | 445,573 | 89,115 | 8,912 | 2,020 |
| NW6-10-2 | 2 | ... | 2 | ... | 12,803 | 6,401 | 640 | ..... |
| SW14-12-3 | 1 | ... | ... | 1 | 92,537 | 92,537 | 4,627 | 11,006 |
| NW15-12-3 | 5 | ... | ... | 5 | 79,057 | 15,811 | 1,581 | 12,666 |
| SE15-12-3 | 19 | 4 | 3 | 12 | 1,914,946 | 100,786 | 11,968 | 19,671 |
| SW15-12-3 | 31 | ... | 1 | 30 | 1,570,870 | 50,670 | 9,818 | 24,884 |
| NW16-12-3 | 3 | ... | ... | 3 | 83,595 | 27,865 | 2,090 | 9,864 |
| NE22-12-3 | 32 | ... | 5 | 27 | 7,136,090 | 223,000 | 44,600 | 127,319 |
| NW22-12-3 | 2 | ... | ... | 2 | 102,457 | 51,228 | 3,415 | 2,449 |
| SE22-12-3 | 36 | ... | ... | 36 | 13,883,296 | 385,647 | 86,771 | 235,298 |
| SW22-12-3 | 10 | ... | ... | 10 | 2,354,514 | 235,451 | 39,242 | 58,820 |
| NW23-12-3 | 9 | ... | ... | 9 | 1,822,359 | 202,484 | 30,372 | 56,677 |
| SE23-12-3 | 1 | ... | ... | 1 | 271,957 | 271,957 | 6,799 | 2,779 |
| SW23-12-3 | 20 | ... | ... | 20 | 8,339,576 | 416,979 | 69,496 | 133,600 |
| NW26-12-3 | 23 | 3 | 9 | 11 | 2,280,648 | 99,158 | 17,543 | 6,704 |
| NE27-12-3 | 13 | ... | 1 | 12 | 3,655,683 | 281,206 | 22,848 | 85,986 |
| NW27-12-3 | 9 | ... | ... | 9 | 2,057,879 | 228,653 | 34,298 | 67,861 |
| SE27-12-3 | 25 | ... | ... | 25 | 4,853,128 | 194,125 | 30,332 | 175,345 |
| NE34-12-3 | 27 | ... | ... | 27 | 8,897,617 | 329,541 | 59,317 | 168,909 |
| SE34-12-3 | 38 | ... | 2 | 36 | 29,181,444 | 767,933 | 182,384 | 238,718 |
| SW34-12-3 | 12 | ... | ... | 12 | 5,617,171 | 468,097 | 56,172 | 62,091 |
| NE35-12-3 | 9 | ... | ... | 9 | 618,928 | 68,769 | 7,737 | 22,997 |
| NW35-12-3 | 7 | ... | ... | 7 | 559,729 | 79,961 | 13,990 | 15,950 |
| SE35-12-3 | 10 | ... | 1 | 9 | 2,934,108 | 293,411 | 29,341 | 19,643 |
| SW35-12-3 | 14 | ... | 1 | 13 | 3,506,963 | 250,497 | 25,050 | 7,317 |
| NW36-12-3 | 3 | ... | ... | 3 | 1,547,307 | 515,769 | 51,577 | 22,946 |
| SE36-12-3 | 1 | ... | 1 | ... | 6,409 | 6,409 | 641 | ..... |
| SW36-12-3 | 13 | 1 | 3 | 9 | 3,055,656 | 235,050 | 30,557 | 24,307 |
| Total | 1,452 | 135 | 331 | 986 | 436,024,310 | 300,292 | 34,575 | 2,952,710 |

present definition, wells across the old line came in at 100 to 200 pounds formation pressure and in the "Mansion Area" or northern part of the pool at 400 to 500 pounds formation pressure.

Production performance of wells in these parts of the pool indicate that the greatest damage done by large production and high gas/oil ratios to the south was the great depletion of gas energy and formation pressure. Wells in the "Mansion Area," which includes the State Capitol grounds and the Governor's Mansion, are showing a nice recovery. However, much of this has been obtained by artificial lift after a relatively short flowing life for the average completion. Total saturation seems to have been as high in this part of the pool as it was to the south. However, since this part of the structure had apparently been robbed of its pressure before the discovery well was completed in the "Mansion Area" it is doubtful that the recovery per acre foot will be as great as would be expected had the northern part of the structure not been exposed to drainage for such a long period before its actual development was commenced.

Perhaps the most interesting feature of Oklahoma City production is the outstanding initial production of individual wells and the high recovery from single wells and acreage units. The largest initial gauge from the Lower Simpson was 29,600 barrels and from Wilcox sand, 101,002 barrels from Phillips Petroleum Company's McBeth 1, NE 10-11n-3w. This is one of the largest high-gravity oil wells ever completed and the largest initial gas volume of 202,000,000 cubic feet is thought to be one of the greatest on record. On a quarter-section basis, recovery as of December 1, 1938, is estimated to have ranged from as low as 4723 barrels per well and 472 barrels per acre to as high as 1,051,393 barrels per well and 183,994 barrels per acre. The average for the 100 quarter-sections is 300,292 barrels per well and 34,575 barrels per acre, based on a total of 1452 wells, 13,000 productive acres and a total recovery of 436,-024,310 barrels.

In two instances it was found that 40-acre tracts had yielded particularly high recovery on a well density far higher than the average for the field and these were segregated. One of these and the most outstanding in the field is the NW NW of Section 2-11n-3w, where 22 wells had yielded 14,639,286 barrels, a per well average of 665,422 barrels and a per acre average of 365,982 barrels. There

were two wells on this 40-acre tract for which the recovery figures could not be identified so the figures shown above do not present the entire picture. The whole of the quarter section in which this 40-acre tract is located had produced a total of 24,715,891 barrels, approximately a quarter million barrels of which was from Lower Simpson and the remainder from Wilcox sand. This was a per well average of 494,318 barrels and a per acre average of 154,474 barrels.

To date the greatest quarter section in the pool is the 160-acre tract lying immediately west of that just discussed. This is the northeast quarter of Section 3-11n-3w, in what was called Walnut Grove Addition. The leases in this tract were owned by companies who realized the economic importance of drilling no more wells than necessary to efficiently drain the sand. As a result only 28 wells were completed, whereas 51 wells had been drilled in the quarter-section immediately east. These 28 wells had recovered 29,439,138 barrels of oil, an outstanding per well average of 1,051,393 barrels and a per acre average of 183,994 barrels. The southeast quarter of Section 34-12n-3w, which lies immediately north of that just described, was adjacent to the U-7 Zone described heretofore and it was not until that zone was extended northward that the north line of wells could be drilled on this tract. The remaining wells, therefore, had the advantage of draining at least gas and pressure from a wide area for the four-year period mentioned and, as a result the recovery here is outstandingly high. Thirty-eight wells in this quarter-section had produced a total of 29,181,444 barrels, an average of 767,933 barrels per well and 182,384 barrels per acre. This quarter section produced in October, 1938, a total of 238,718 barrels from 36 wells compared to 155,213 barrels from 27 wells in the northeast quarter of Section 3-11n-3w. The race between these two quarter-sections for the record of highest recovery in the pool should prove of interest since they are now so close together, are located similarly on the structure and have about the same sand conditions. As a whole, Section 3-11n-3w had produced 61,848,644 barrels, or 14.2 percent of the total for the pool and the highest recovery from any full section.

The most densely drilled and one of the most interesting quarter-sections in the pool is the southeast quarter of Section 22-11n-3w, an area which was mentioned heretofore as having been skipped as development progressed to the northwest from the southernmost part of the field. Ownership in this 160-acre tract was widely divided and 53 wells were drilled upon it. These wells had recovered 16,871,583 barrels, an average of 318,332 barrels per well and 105,447 barrels per acre. Part of the production came from Lower Simpson and part from Wilcox sand. Near the contact between these two formations the Wilcox sand was very ragged and several small wells were completed along this line. Here again is a 40-acre tract which is of interest. Twenty-five of the 53 wells were drilled on the northwest 40 acres of the quarter section. These had yielded 7,669,105 barrels, a per well average of 306,764 barrels and a per acre average of 191,727 barrels.

### Economics

Development of the Oklahoma City pool was commenced at a time when equipment and labor prices were high and the cost of completing wells at that time was the highest during the history of the pool. Data presented by the United States Bureau of Mines in R.I. 3330, show that in 1929 the cost of drilling an Oklahoma City well averaged $155,000. In 1932 this cost had dropped to $110,000 and in 1934 to $85,000. Many of the wells cost more than the highest figure shown and for the purposes herein it is assumed that to date the average cost had been $110,000 per well, not including exploratory costs and leasehold costs. This would mean an investment of $159,720,000. Any attempt to determine leasehold costs must be based purely on guess. The writer makes the guess that the 13,000 productive acres had an average cost of $2000 per acre or a total of $26,000,000. Lifting costs range anywhere from a few cents per barrel to approximately 50 cents per barrel and an average of 25 cents per barrel is assumed herein. This would indicate a total lift cost of approximately $109,000,000 and bring the total costs to approximately $295,000,000. An item of $15,000,000 should take care of miscellaneous costs. In order to arrive at a gross income figure a weighted posted price was arrived at by multiplying each posting by the number of days such posting was in effect, adding all these and dividing the total amount of dollars and cents by the total number of days involved. The figure thus derived is $1.06 per barrel which, multiplied against the total recovery to date, gives a gross income of $462,186,000. Deducting one eighth royalty, leaves a net income of approximately $404,500,000, indicating that the Oklahoma City pool as a whole has paid out. Many of the wells produced only a small fraction of the oil necessary to pay them out while many more have been on "velvet" for a long time as shown by the figures in Table 1.

Applying the same partly assumed factors as used above to the quarter-sections discussed herein in detail develops a point which is of interest in regard to well density and its relation to the economics of obtaining oil. The gross cost to date for drilling 1452 wells and lifting 436,000,000 barrels of oil to the surface, including estimated leasehold costs, indicates a per well average cost of $213,500. This would indicate that to date it has cost $10,888,500 to develop and produce the northwest quarter of Section 2-11n-3w, as compared to a net income of $22,924,000, or a final net income of $12,035,500 to date. The same application to the northeast quarter of Section 3-11n-3w, shows a total development and lifting cost of $5,978,000 and a final net income to date of $21,502,000. Difference in sand conditions undoubtedly would complicate this comparison. However, it is noted that the difference in recovery per acre to date has been only 29,520 barrels.

A study of conditions in the two quarter-sections indicates that the operators in the northwest quarter of Section 2-11n-3w, probably could have obtained just as much oil had they not exceeded the well density of 5.7 acres of the northeast quarter of Section 3-11n-3w. One of the evils of a per well allowable basis in prorating oil production is the encouragement to drill more wells than are needed to efficiently drain a property. This tendency is evident in parts of the Oklahoma City pool but as a whole it shows a high efficiency in this respect.

At present there are about 40 bottom-hole reciprocating pumps in operation, 125 bottom-hole electric pumps, one plunger lift and eight flowing wells. All the latter are producing from upper horizons. The remaining approximately 812 wells are either pumping or equipped to pump with individual geared pumping units and sucker rods. Until rather recently it was general practice to operate these wells at 24 to 28 strokes per minute, the longest stroke the unit would permit. Usually this does not exceed 74 inches. At these rates and length of stroke, polished rod loads ranged from an average of about 20,000 pounds to a maximum of 37,000 pounds.

1. Making a connection

2. Spot Welding the Connection

PICTORIAL

# Welding Casing

By FLOYD L. TEMPLE

THE use of welded casing is a comparatively new practice, but appears to be gaining favor. Tests show up to 90 and 100 percent efficiency. But, let it be understood that its use is confined to the limits of weldable casing. Several papers on the types of casing used and the results obtained are available to those interested in the technical details of the practice.

The casing is available in ranges two and three and the weight of the casing is comparable to that of the thread and couple type. The weight varies only by the difference of the weight of the collars. For example: 40-pound standard pipe weighs 38.87 pounds in welded casing.

Several methods of jointing the pipe are in use in various sections of the country, but the most common type in use in the Gulf Coast area is a slip-joint of the bell and spigot type. After a joint of casing is landed, which is done in much the same manner a drill pipe connection is made on a rig, straight-edges are used to check the alignment; the casing then is tacked by spot welds at four points, and the alignment re-checked.

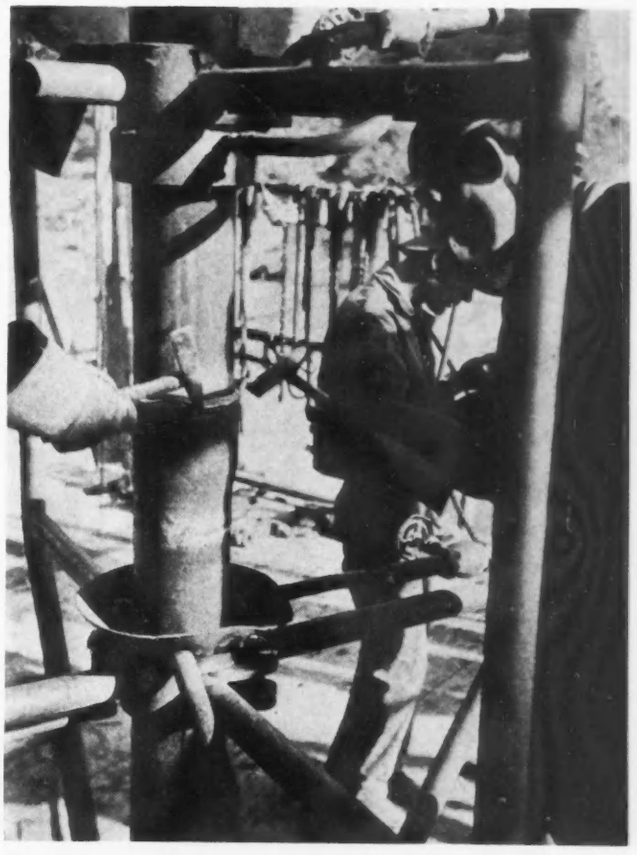
### Pipe Alignment

After being assured of the alignment, the two joints of casing are then welded together. The welders work in shifts of two and when necessary, are changed often enough to maintain the desired rate of welding. The employment of two men working simultaneously on opposite sides of the pipe expedites the work and helps to maintain a more uniform distribution of heat throughout the joint. Before starting the field work a knowledge of the pipe to be used, the weldability of the pipe and the procedure to be followed is carefully worked out. That procedure is then followed throughout the job. The electrode used is one of comparable tensile strength to properly blend with the metal of the pipe used.

As soon as the first weld is completed, hammers

**STORY OF**

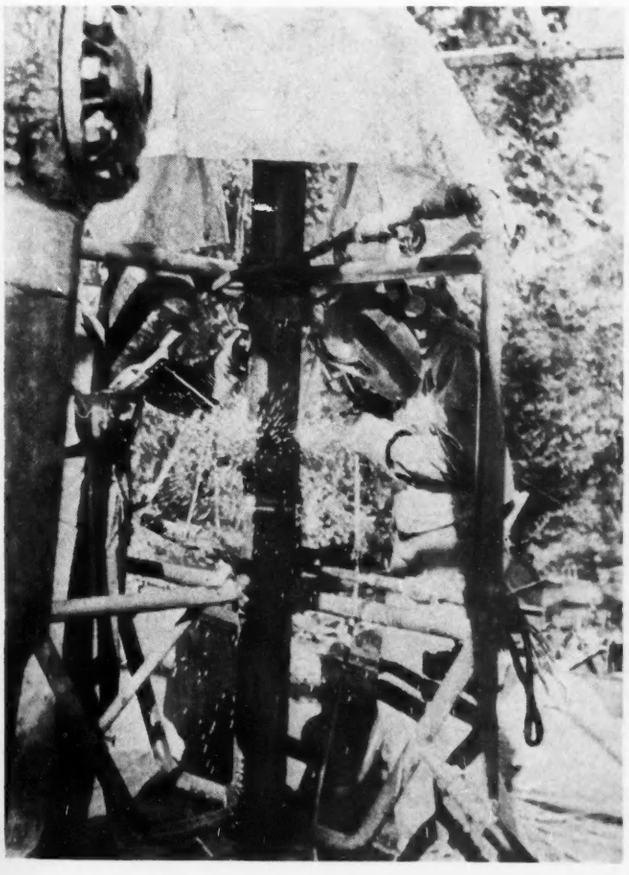
# *Oil Well Strings*



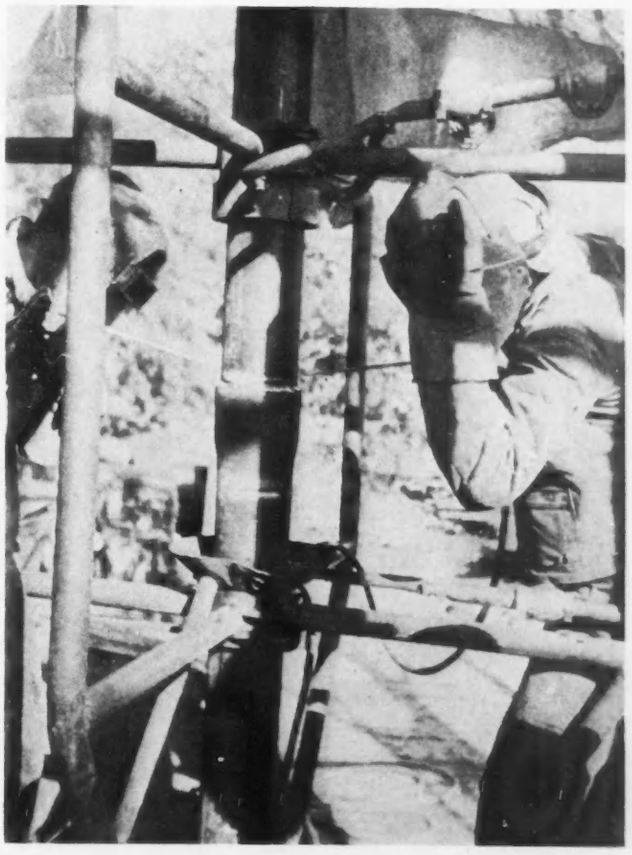
4. **Scaling the bead**

are used to remove the slag, or scale from the bead to prepare the joint for the second weld. This procedure is governed largely by the type of materials used. The second weld is then put on in much the same manner as the first: two welders work on opposite sides of the pipe simultaneously as before.

In running welded casing of larger diameters,



3. **Welding the connection**



5. **Starting the second weld**

6. Welding the string

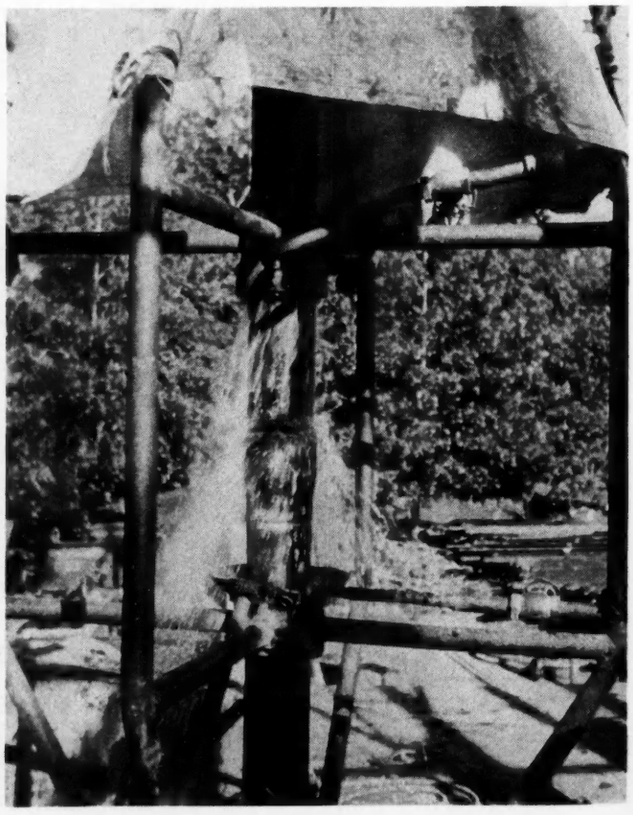
such as, 9⅝-inch and 10¾-inch, it is not necessary to follow any procedure for cooling the pipe before it is lowered into the hole. Tests have shown that it is safe to submerge the pipe as soon as the color has left it, which is almost immediately after the last weld is completed. With the smaller diameter casing such as the 5½-inch O.D., shown in the illustrations, the weld is allowed to cool in the air for one minute or more, after which a shower of water is played on the weld for 30 seconds more before the joint is lowered into the hole.

### Running the Pipe

In the 9⅝-inch and 10¾-inch casing the running time is comparable to the running time of thread and couple casing of like diameters. As the size of the casing is increased above 10¾-inches, the running time of welded casing is increasingly faster over that of thread and couple casing. Whereas; as the size of the casing is reduced below that of 9⅝-inches, the running time becomes slower. The same equipment can be used for running welded casing that is used for running thread and couple casing, adding no expense to either the operator or contractor.

The welded string of pipe is a bottle tight job as there can be no "run-around" leaks. The actual metal deposits on the joint is as thick, or thicker than the pipe itself.

6A. Welding the string



7. Cooling the weld

# WHAT BEARING SHOULD I SPECIFY FOR MY OIL FIELD EQUIPMENT?

[THE THIRD OF A SERIES OF QUESTIONS TO HELP SOLVE THE PROBLEMS OF BEARING BUYERS IN THE OIL INDUSTRY]

Before selecting the make of bearing to use in your equipment, don't you owe it to yourself to get answers to these questions from any bearing manufacturer whose product you are considering? The answers as applying to the TIMKEN Tapered Roller Bearing are included below.

### What is the guarantee on your bearings?

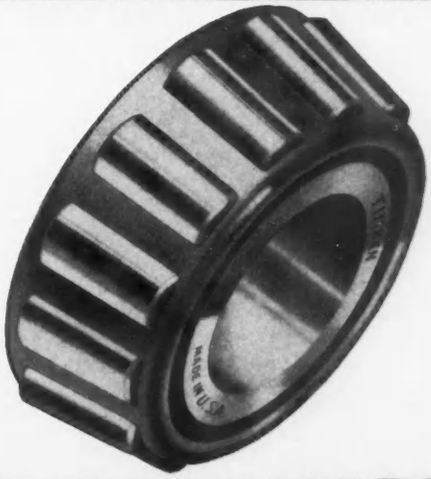
The Timken Roller Bearing Company sells more than a box of bearings and an invoice. It has stood behind its products for 40 years and will *continue* to do so. The sale is never completed until the user is satisfied.

### What application experience have you had with your bearings?

The Timken Roller Bearing Company has applied 450,000,000 bearings to all kinds of applications. And as stated in the first of this series of advertisements over 10,000,000 TIMKEN Bearings have been applied to oil field equipment alone.

### What phenomenal performance records can you claim for your bearings?

Nearly all of the deep drilling records have been made with equipment in which TIMKEN Bearings were used. The crankshaft of the engine that recently drilled the world's deepest well was equipped with TIMKEN Bearings. Similiar endurance records are found in practically every industry where TIMKEN Bearings are used—the mining industry, steel industry, paper making industry and many others.



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# *Measurement of Rates of Gas Delivery*

## UNDER CONDITIONS OF NONCRITICAL FLOW AND CRITICAL FLOW

By BEN ALTMAN, Staff Writer

THE capacity of a natural-gas well to produce gas usually has been described in terms of the "open-flow" delivery and the shut-in-pressure at the wellhead. For most gas wells there is a definite maximum rate at which gas can be produced efficiently or without damage to the well. This rate has been arbitrarily fixed at some percentage of the "open-flow" capacity obtained by blowing the gas directly into the atmosphere from open tubing or casing.

The determination of the open-flow capacity of gas wells by "blowing the wells" into the atmosphere at certain prescribed intervals has produced a regrettable loss of gas. Quite frequently the volumes blown away were as much as five percent of the total amount of gas transmitted through the lines. As great as this loss has been, it is undoubtedly small compared with the damage to the wells themselves. In many instances wells have been completely ruined by open-flow testing. Any method which eliminates the periodical tests by blowing the gas into the air, prolongs the life of the well considerably, and reduces the tendency for sand and lime formations in the well to cave, prevents water "coning," and decreases the possibility of trapping gas in the underground reservoir with water. Subjecting gas wells to extreme conditions of flow, such as occur when open-flow tests are made, enables abrasive material to accompany the gas at high velocities, damaging equipment and creating an operating hazard. Many state conservation commissions have adopted rules which prescribe that the working capacity of the well shall not exceed a certain percentage—usually 25 percent of the open-flow capacity. However, an inconsistency exists, since these rules also specify that the open-flow capacity shall be determined at definite periods—sometimes monthly.

How best to conserve gas resources for efficient utilization is one of the main considerations in studying methods of gauging and controlling wells. If wells are allowed to blow unrestricted at the wellhead to test their open-flow capacities, there necessarily is a loss of a large volume of gas, as stated previously, especially from a well whose rate of stabilization of pressure-flow conditions is slow, requiring a long blowing period to obtain equilibrium. For example, if an average interval of 30 minutes had been required to obtain stabilized flow during the tests conducted on 221 gas wells in the Texas Panhandle fields, which had a combined open-flow capacity of approximately 5,500,000,000 cubic feet of gas per day, about 115,000,000 cubic feet of gas would have been blown to the air and wasted. If the blowing period made on each of the 40 wells classified as gas wells in the Oklahoma City field, having a total open-flow capacity of 1,200,000,000 cubic feet of gas per day, had been only 15 minutes, approximately 12,500,000 cubic feet of gas would have been blown to the air during the open-flow tests. It is evident from the two examples cited that the quantity of gas blown to the air in gaging is an appreciable factor even of the duration of the flow is limited to 15 minutes.

### Metering Devices

The instruments most commonly used in calculating open-flow of gas wells are: Pitot tube, orifice well tester, choke nipple, critical flow provers, orifice meters, funnel meter, and the back-pressure method. Each has its advantages and disadvantages as well as its limitations. Rates of delivery from gas wells can be measured under conditions of noncritical flow with a funnel meter, an orifice well tester, or any other orifice-type equipment. The funnel meter is better adapted to use on small wells since the maximum rate of flow that can be measured with it is 8,000,000 cubic feet a day. For critical flow the following may be used: Pitot tube, choke nipple, critical flow provers, and the back pressure method. These may also be used in measuring noncritical flow.

### Using An Orifice Well Tester for Measuring Noncritical Flow Open Flow by Orifice Well Tester

When an orifice well tester is used the orifice should not be near any change in the direction of the flow of gas or obstruction to gas flow, and the measuring equipment should be an appreciable distance from the wellhead to minimize the effect of disturbances caused by its fittings. Often the causes of disturbances in noncritical flow are difficult to locate, and eddies in the gas stream caused by flow through the wellhead fittings are difficult to eliminate, so every precaution should be taken to prevent disturbances to the flow of the gas approaching the orifice. Because of the small size of most casinghead gas wells, the method of testing the flow by an orifice well tester is very accurate and reliable for this work. In order to use the orifice well tester, the specific gravity of the gas must be determined.

The orifice well tester consists simply of orifices, varying in size from ⅛-inch in diameter to 1¼

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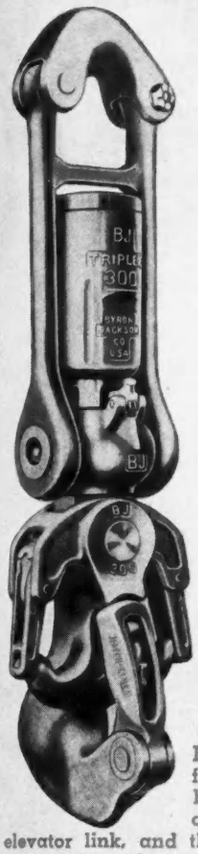
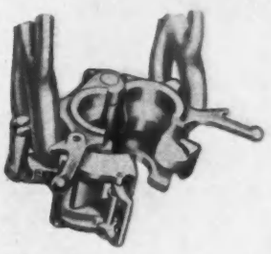
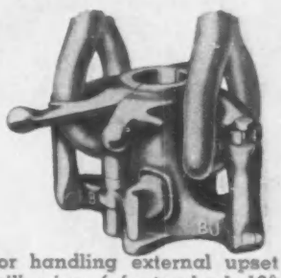
## ment every day in the year!



Drilling crews "prefer" BJ Triplex Hooks because of the separate hooks for each elevator link, and the swivel bail—all equipped with safe "locking arms" which provide extra strength and safety not otherwise obtainable. Why not give your crews these modern advantages?

The fully heat treated body of this BJ Type A Center Latch Elevator does not upset under the pounding action of tool joints contacted at high speed. The protected latch—long guarded horns, and other features make it a favorite everywhere for handling drill pipe.

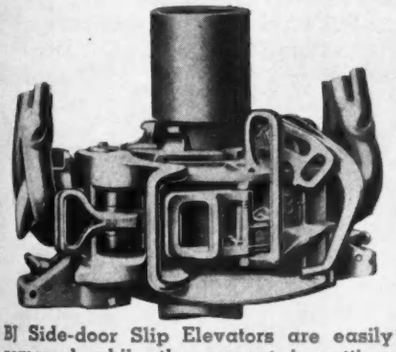




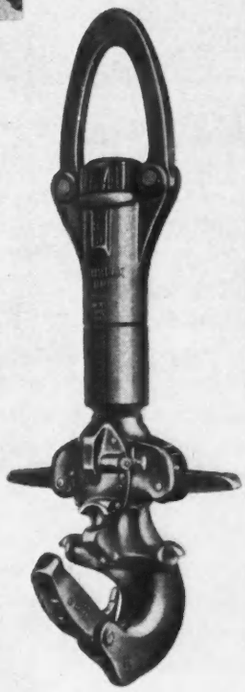

For handling external upset drill pipe (of standard 18° taper) without using lifting plugs, specify the BJ Type G Elevator: for side door operation specify Type B.

This new BJ Rotary and Casing Tong is an Extra-Heavy Type, fast in regular service, and amply strong for breaking out drill collars and other heavy duty service. Perfect contact all around the pipe permits BJ Tongs to grip securely without crushing.

The acknowledged leader for handling casing, BJ (Wilson Type) Side Door Elevators, are made for all pipe sizes from 2⅜" to 24½" in diam.



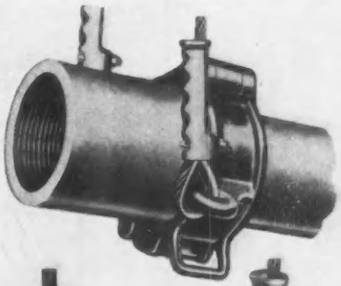
BJ Side-door Slip Elevators are easily removed while the cement is setting. They carry the load on four long slips, without lifting under the collar or coupling; they are easy to operate; and are safe for the longest, heaviest strings.

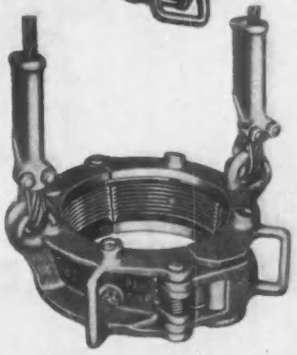


The BJ "100" Triplex Hook (above). Widely used where loads up to 100 tons are carried.

The BJ "50" Triplex Hook (above) meets the demand for a light-weight hook for portable rigs, exploratory drilling and drilling in with tubing. The over-all length of only 71 inches makes it the perfect hook for use in short derricks.

BJ Single Joint Elevators replace unhandy and dangerous rope slings for "tailing in" the next joint of casing. The Type J (at right) is for collar type pipe; the Type P (below) has slips for handling external upset (5°) casing. See page 465, 1938 Composite Catalog.





# BJ DRILLING TOOLS

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inches usually, hose, and siphon-gage. To test a well, all openings but one are closed, or if the well is shut in at the casinghead, allow the well to blow into the atmosphere until the rate of flow is nearly constant, then attach the orifice well tester to a two-inch opening and allow the gas to flow into the atmosphere through the proper size or orifice. After connecting the apparatus and selecting the proper size orifice which necessitates reading the gage and noting the height of the water in the glass, the pressure is read. By referring to tables which accompany each instrument, the capacity of a well for a 24-hour period will be found under the specific gravity and opposite the pressure. It will be noted that the capacity varies as the square root of the pressure and may be computed by the following formula:

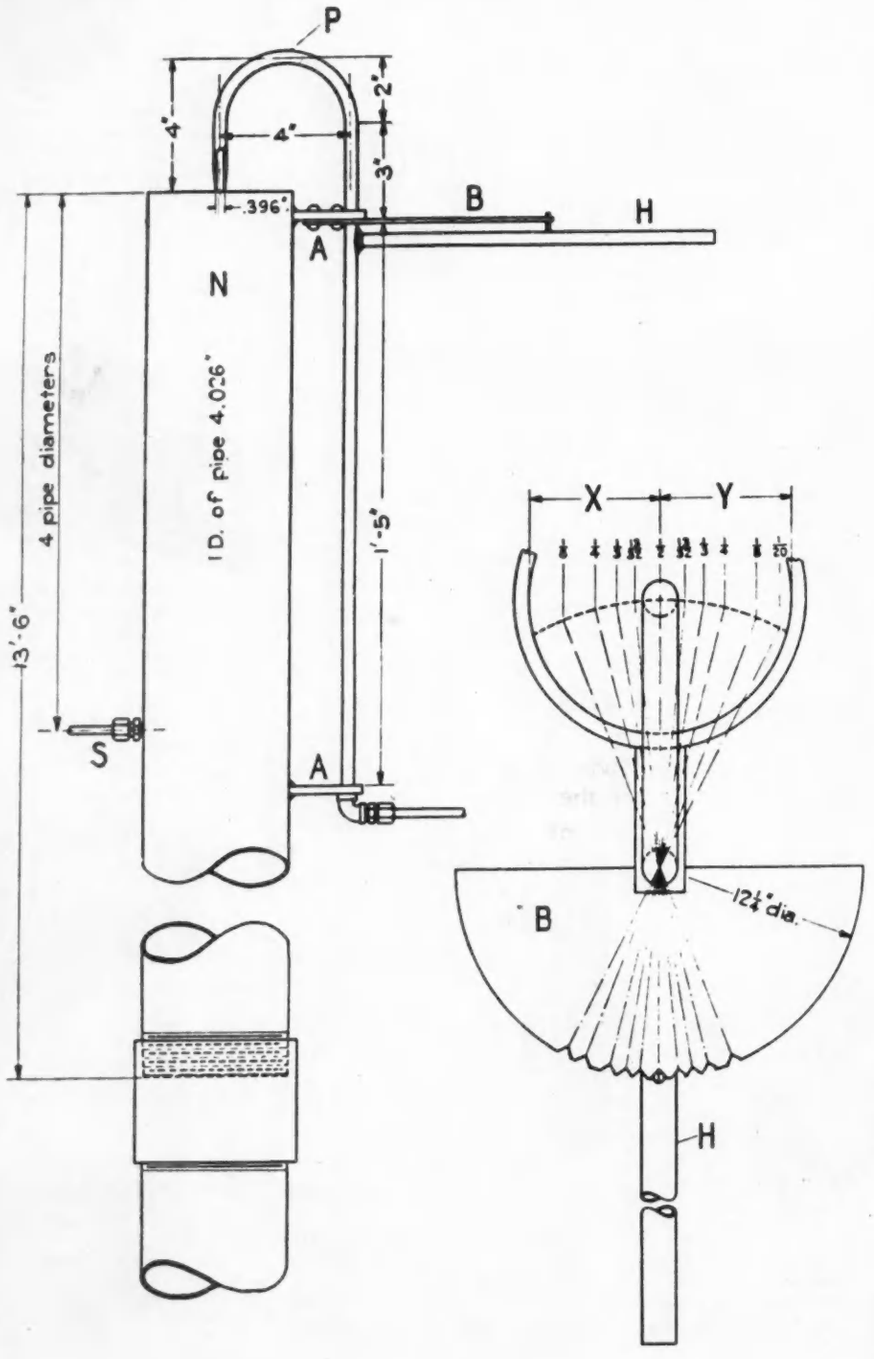
$$Q = C\sqrt{h}$$

In which:

Q = rate of flow in cubic feet per 24 hours at a base pressure of 14.65 pounds per square inch absolute; base and flowing temperature of 60° F.

C = quantity for one inch of pressure as obtained from the tables.

h = pressure in inches of water.




N, 4-inch pipe nipple; P, Pitot tube; A, steel supporting arms; B, notched semicircular tin plate; H, handle welded to Pitot tube; X and Y, positions each side of center position; S, side static pressure connection

**Set-up of equipment for calibration of a Pitot tube to measure gas-delivery rates.** (Taken from Bureau of Mines, Monograph 7)

### Measurement of Gas Delivery Rates With Pitot Tubes

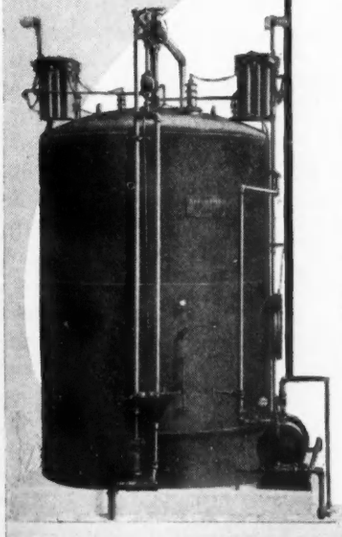
The Pitot tube is simply an instrument that measures the static pressure of the gas stream and at the same time the static pressure plus the dynamic pressure of the flow—the difference between these pressures being the impact pressure of the flow. The impact pressure element is a small bent tube, the short leg of which is inserted in the gas stream at the desired point with the plane of the opening in the tip perpendicular to the direction of the flow of gas. The planes of the openings through which the static pressure is determined parallel the direction of flow. With noncompressible fluids and gases on which the static pressure in the plane of the opening in the Pitot tube is equivalent to that of the atmosphere, the approximate velocity of flow is calculated from the specific gravity and the temperature of the fluid, the diameter of the gas stream, and the impact pressure, if the velocity distribution in the stream is normal. Any difference between the static pressure and atmospheric pressure has to be considered in calculating the velocity of flow of compressible fluids. The first recognized application of the Pitot tube for measuring gas was made in 1886 by Prof. S. W. Robinson at Ohio State University. He used the hydraulic formula for low-pressure measurement, neglecting changes in gas density. At high velocities the adiabatic formula was used. The results of Robinson's investigations and experiments apparently remained unchallenged until T. R. Weymouth, appearing before the American Society of Mechanical Engineers in 1912, substituted constants in the adiabatic formula which made the use of the Pitot tube more applicable to natural gas.

Reid and Rawlins have determined that when the velocity of a stream of gas from a cylindrical pipe attains the velocity of sound in the gas (acustic velocity), the absolute static pressure of the jet is a fixed percentage of the absolute impact pressure.

# VOLUME LOSSES

## REACH *Staggering* PROPORTIONS WHEN CONVERTED INTO DOLLARS

2%



Two per cent is authoritatively stated to be a conservative estimate of the average volume losses from well to refinery in the production and handling of crude oil. In terms of percentage these losses may appear to have little significance. When converted into dollars they merit the careful consideration of even the smallest producer.

An average volume loss of two per cent would amount to **$25,282,342.** when figured at an arbitrary price of **$1.00** per barrel on the total U. S. crude production for 1937, and an annual loss of **$3,650.** for a single well producing 500 barrels a day.

Producers of crude in any quantity will find a careful check of gravity and volume losses of utmost importance. They also will be vitally interested in the fact that Petreco Electromatic Dehydration saves both the gravity **and** volume of "cut" crudes as no other treating method can do. Petreco engineers are available at all times for assistance in making preliminary investigations and tests for determining gravity and volume losses without cost or obligation.

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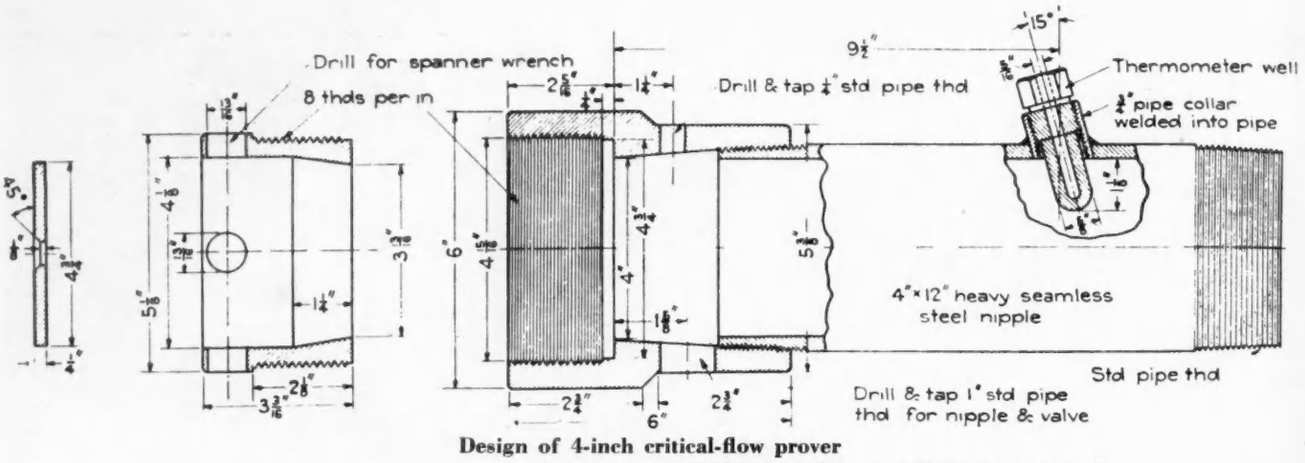
Drill for spanner wrench
8 thds per in
Drill & tap ¼" std pipe thd
Thermometer well
¼" pipe collar welded into pipe
4"×12" heavy seamless steel nipple
Std pipe thd
Drill & tap 1" std pipe thd for nipple & valve

**Design of 4-inch critical-flow prover**

(Taken from Bureau of Mines, Monograph 7)

Reid says this caused the flow to vary directly as the absolute impact pressure when the impact pressure exceeds 15 pounds gauge pressure. This may be expressed by the critical velocity formula,

$$Q = 23.81\ d^2\ (Ph + 14.7)$$

Where:

Q = rate of flow in thousands cubic feet a day at a pressure base of 14.7 pounds per square inch absolute and a temperature of 60° F. with specific gravity of the gas being 0.6.

Ph = the impact head pressure in pounds per square inch gauge.

When the impact pressure, however, is less than 15 pounds gauge, the following formulas may be used.

$$Q = 34.69\ d^2\ \sqrt{W}$$
$$Q = 128.0\ d^2\ \sqrt{M}$$
$$Q = 182.6\ d^2\ \sqrt{P}$$

Where:

Q = rate of flow in thousands of cubic feet a day for a pressure base of 14.7 pounds per square inch, a temperature of 60° F. and a specific gravity of 0.6.

W = the impact pressure; inches of water gauge, at center of pipe;

M = the impact pressure, inches of mercury gauge, at center of pipe;

P = impact pressure, pounds per square inch gauge, at center of pipe.

## Measurement of Gas-Delivery Rates With Choke Nipples

Choke nipples are used when highly-abrasive sand accompanies the flow of gas. The nipple is threaded on the outside with standard pipe thread to permit direct connection to wellhead fittings. Under conditions of relatively high pressure on the upstream and atmospheric pressure on the downstream end of the choke nipple the delivery rate depends upon the upstream pressure and the specific gravity and the absolute flowing temperature of the gas, or it may be expressed by the following equation.

$$Q = \frac{C \times P}{\sqrt{G \times T}}$$

Where:

Q = rate of flow in thousands of cubic feet per 24 hours at a pressure base of 14.4 pounds per square inch and a temperature base of 60° F.

C = coefficient

P = upstream pressure, pounds per square inch absolute

G = specific gravity of the gas

T = temperature of flowing gas, °F. absolute.

## Use of Critical-Flow Provers to Measure Delivery Rates of Natural Gas

Measurement of the rate of delivering gas through critical-flow provers is based upon the fundamentals of gas flow through orifices under critical conditions. Delivery rates are governed by the upstream pressure on the orifice and are not affected by the downstream pressure throughout a definite range of pressure conditions. Under the conditions the flow is "critical"; that is, the velocity has reached a maximum and remains constant, and the delivery rate is governed by the density of the gas. Therefore the rate of flow is directly proportional to the absolute upstream pressure and does not change so long as the upstream pressure remains constant, regardless of any change in the downstream pressure.

Theoretically the flow of air through an orifice under conditions of adiabatic and frictionless flow is critical when the ratio between the downstream and upstream pressures is less than 0.528 (where ratio of specific heats is 1.4 and ratio of orifice to pipe diameter approaches zero). However the flow of natural gas through small straight-edge orifices with diameters less than 0.6 pipe diameters is critical for ratios of absolute downstream pressure to absolute upstream pressure less than values varying with condition from approximately 0.56 to 0.58. The formula for computing the rate of flow is the same as for the previously discussed choke nipple except that the coefficients will be different and are calculated. The formula does not take into account the effect of deviation of the gas from Boyles' law, therefore the correction for deviation of natural gas from Boyles' law should be made in the critical-flow formula in the same manner as in the orifice-meter formula; that is the rate of flow before correcting for deviation of natural gas from Boyles' law should be multiplied by the factor

$$\sqrt{1 + \frac{N}{100}}$$

where N is the percent deviation of natural gas from Boyles' law.

Disturbances in the gas stream do

**Coefficients for Choke Nipples When Measuring Delivery Rates Under Conditions of Critical Flow.**

| Size of Choke, Inches | Coefficient | Size of Choke, Inches | Coefficient |
|---|---|---|---|
| 1/8 | 6.25 | 1 | 85.13 |
| 1/4 | 14.44 | 1 1/2 | 112.72 |
| 1/2 | 26.51 | 5/8 | 179.74 |
| 3/4 | 43.64 | 3/4 | 260.99 |
| 7/8 | 61.21 | | |

Coefficients in the table are based on data from Diehl, John C., Natural Gas Handbook.

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not have an appreciable effect on measurement of gas flows under critical conditions because the measurement depends only upon the up-stream pressure on the orifice and is not affected by the differential pressure across the orifice.

### Minute Pressure Method

Minute pressure is only an approximate method. The well is first opened wide to blow off the pressure head then shut in quickly and after one minute the pressure is noted. The following assumptions are made: (1) that after one minute the pressure in the casing is uniform (2) that under flowing conditions the pressure in the casing is atmospheric and (3) that the conditions are isothermal (at constant temperature when the gas is either compressed or expanded), the following formula is used in calculating the flow.

$$Q = \frac{1440 \times P \times V}{P_o}$$

Where:

- $Q$ = volume in cubic feet of gas per day.
- $P$ = Gauge pressure after one minute, pounds per square inch.
- $V$ = Capacity of the casing or tubing in cubic feet.
- $P_o$ = Atmospheric pressure in pounds per square inch absolute.

### Orifice Meters in Gauging Flow of Gas

Measurement of gas flow with an orifice meter consists of measurement of two variables: (1) the static pressure or line pressure which is measured as the pressure of the gas in the line is admitted to and acts on the inside of a tube and the atmospheric pressure acts upon the outside of the tube, and (2) the differential pressure across the orifice plate, that is the difference between the pressure at the up-stream tap before the gas passes through the orifice and the pressure at the downstream tap after it has passed through the orifice.

The general formula from which the quantity of gas may be calculated is

$$Q = C\sqrt{h \times P}$$

Where:

- $Q$ = Quantity of rate of flow at base conditions in cubic feet per hour.
- $h$ = Differential in inches of water.
- $P$ = absolute static pressure in pounds per square inch.
- $C$ = basic orifice coefficient = $F_b \times F_{pb} \times F_{tb} \times F_g \times F_{tf} \times F_r \times Y \times F_{pv}$

in which:

- $F_b$ = basic orifice flow factor
- $F_{pb}$ = pressure base factor
- $F_{tb}$ = temperature base factor
- $F_g$ = specific gravity factor
- $F_{tf}$ = flowing temperature factor
- $F_r$ = Reynold's number factor
- $Y$ = expansion factor
- $F_{pv}$ = supercompressibility factor

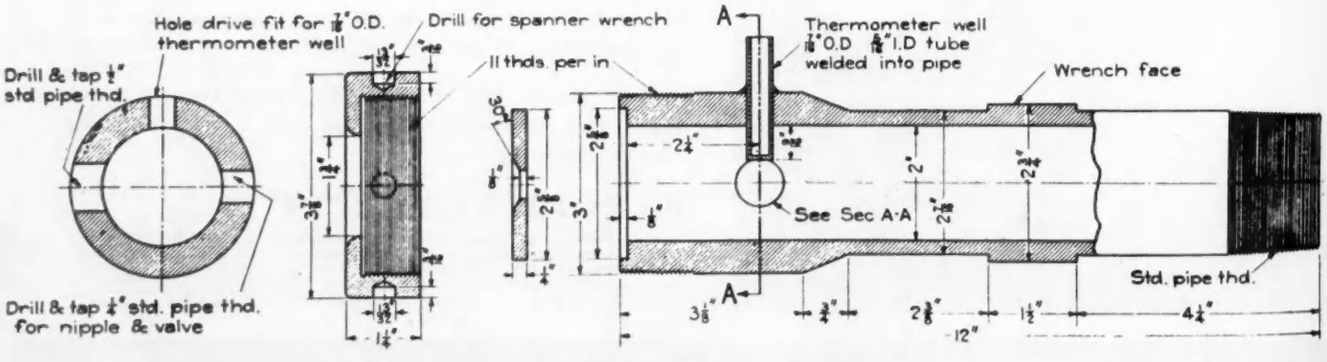
### Ninety Percent Method

The 90 percent rock-pressure method of gauging gas wells is as follows: The well is shut in completely, and permitted to stabilize; after which the formation pressure is either calculated from the casinghead pressure or obtained by use of a bottom hole pressure bomb. The well is then partly opened, the gas being ejected into the flow line instead of the atmosphere, and orifice meter readings taken at several back-pressures. These rates of flow and back-pressures then are plotted against each other on co-ordinate paper. The rate of flow at 90 percent of the formation pressure, as shown by extending the curve, issued as a basis for the maximum allowable rate at which the well should be produced. As a general rule experience indicates that this will be about 20 percent of the open flow capacity of a well. Since this relationship does not always exist, the method cannot be applied generally. However, the idea of determining effects of open flow was an efficient move on the part of certain operators.

### Back-Pressure Method Stands Out

On most of the wells tested by the back-pressure method, the gas used during the test can be delivered into a pipe line; however, in some cases it is impracticable to thus use the gas and it must be vented to the atmosphere. Even then, the gas is delivered at a high back-pressure and very little gas is lost as compared to the volume lost when the well is tested by the open-flow methods. The low rate of delivery also decreases the possibility of damaging the well equipment and of formation caving and water trouble.

Data concerning a well which must be known are its depth and size of casing or tubing through which the gas flows. The specific gravity of the gas must be known and should be determined by a gravity balance. In gauging delivery capacities of normal gas wells by the back-pressure method, the well to be tested is first shut in at the wellhead, and after the pressure in the well and reservoir sand became stabilized, the wellhead pressure is recorded. The well is then allowed to produce gas at a high back-pressure and after conditions again become stabilized, observations are made of the pressure at the wellhead and the rate of delivery of gas from the well. The back-pressure is then reduced and another set of observations are made of the pressure at the wellhead and the rate of delivery of gas from the well. Four sets of observations for back-pressure, ranging from approximately 95 percent to 80 percent of the shut-in pressure, usually furnish sufficient data to establish the relationship between the rate of flow and the shut-in formation pressure squared, minus the back-pressure at the face of the sand, squared, and determine rates of delivery of gas at lower back-pressures, including the "absolute" open flow of the well (rate of flow of gas that would be obtained if the absolute back-pressure at the face of the sand was atmospheric). It is readily seen that the mechanics of the back-pressure method are not so simple as those which govern the use of the Pitot tube. It requires the use of pressure


Hole drive fit for 7/16" O.D. thermometer well
Drill for spanner wrench
Drill & tap 1/2" std pipe thd.
11 thds. per in
A
Thermometer well 7/16" O.D 3/8" I.D tube welded into pipe
Wrench face
See Sec A-A
Std. pipe thd.
Drill & tap 1/4" std. pipe thd. for nipple & valve

**Design of 2-inch critical-flow prover**
(Taken from Bureau of Mines, Monograph 7)

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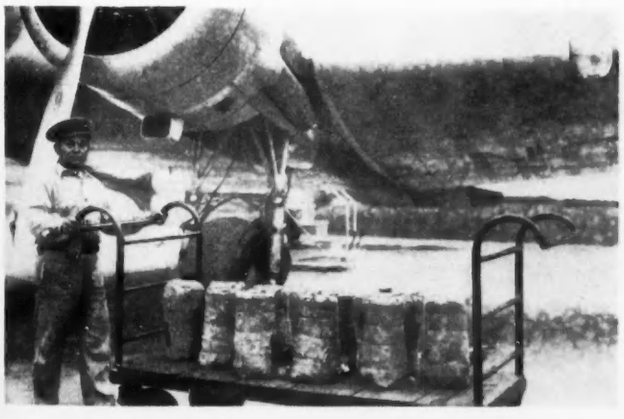
g 10—8½" hard formation Reed DK Rock Bits on the plane in Los Angeles.



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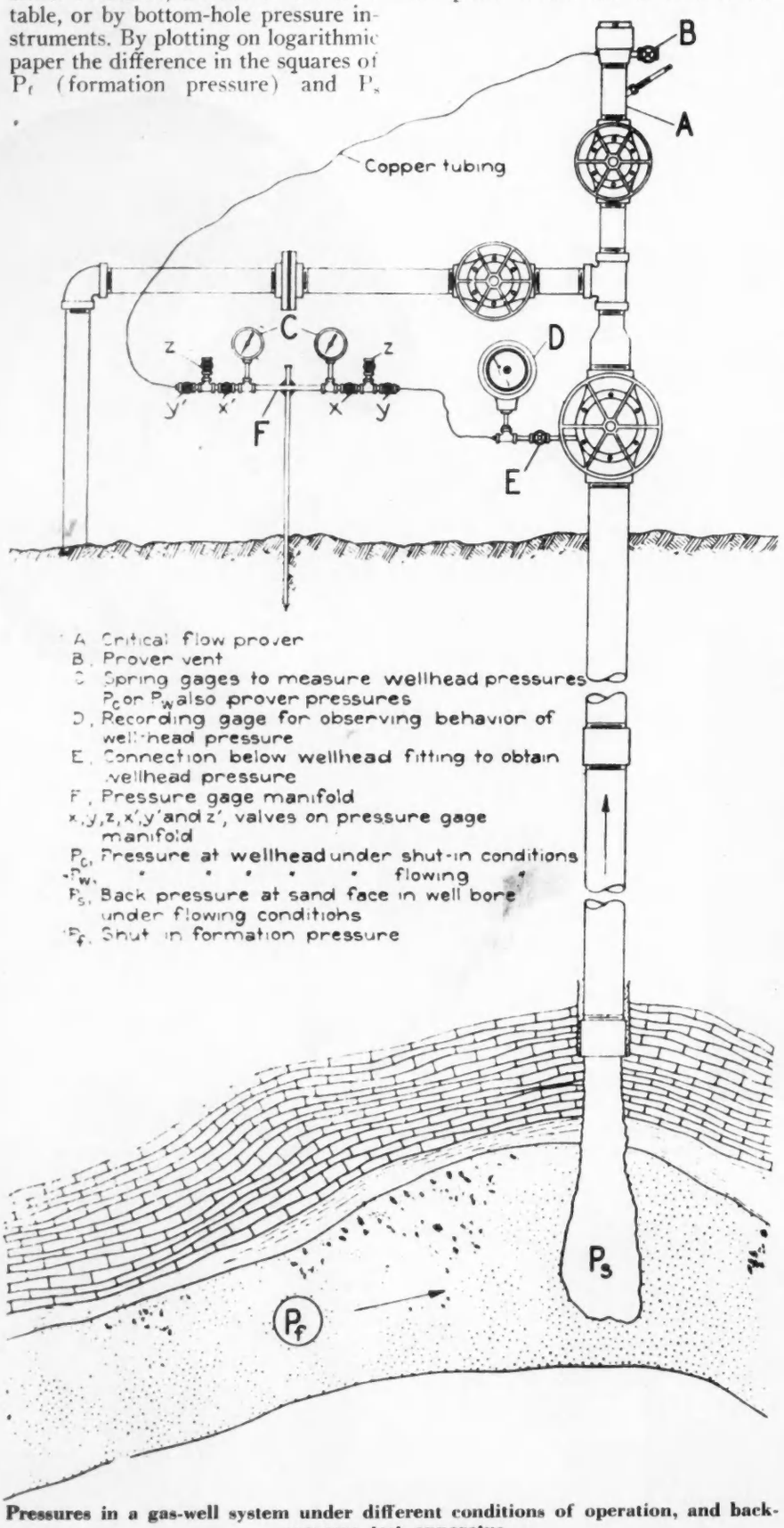
conditions at the face of the sand, and it is necessary to convert observed well-head pressures to formation pressure. This can be done by either formulae, the use of charts or table, or by bottom-hole pressure instruments. By plotting on logarithmic paper the difference in the squares of $P_f$ (formation pressure) and $P_s$ (back-pressure at the sand face) against its corresponding rate of flow, a straight-line relation is established, and by extending the curve to the point where the difference between $P_f^2—P_s^2$ corresponds to the values as set forth, the maximum capacity of the well is determined. This maximum capacity of the well may be computed in either of two ways; first, where the absolute back-pressure at the face of the sand, $P_s$ is assumed to be equal to atmospheric pressure, and $P_f^2—P_s^2$ is computed on this assumption, a quantity known as the "absolute open flow," which was previously defined, is determined; second, where the absolute back-pressure at the well head $P_w$ is assumed to be equal to the atmospheric pressure, then $P_s$ is equal to this pressure plus the pressure drop due to friction plus the pressure due to the weight of the column of gas, and the "open-flow" is determined by computing this equation.

The back-pressure method is more accurate than the other methods in that the maximum possible delivery of the well is determined by observation of the actual condition of the well at various rates of flow. It may increase the life of the well over other methods, the original condition of the producing formation is maintained, no likelihood of crater or fissure development of caving is present, and the encroachment of water into the formation and bore of the well is retarded throughout the formation. No gas is wasted because the well can be produced into the pipe line, and valuable data can be obtained from these back-pressure tests such as data for studying gas-production problems, such as those resulting from the presence of liquids, sand caving, shooting, which now is going through a research stage, clogging of sand face, and unsuccessful completions jobs.

Open-flow methods as a whole have the following disadvantages: (1) There is excessive waste of natural gas; (2) accurate measurement of gas deliveries often cannot be obtained under open-flow conditions; (3) data obtained only under open-flow conditions do not indicate the delivery capacity of the well under normal operating conditions and are not a reliable basis for controlling production; and, (4) extreme conditions of flow often cause underground wastes, resulting in decreased gas recoveries, increased operating difficulties, and danger to wells, operator, and the well equipment.




**Pressures in a gas-well system under different conditions of operation, and back-pressure test apparatus**

(Taken from Bureau of Mines. Monograph 7)

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Petroleum Production by Wilbur F. Cloud.

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Practical Petroleum Engineer's Handbook by Joseph Zaba and W. T. Doherty.

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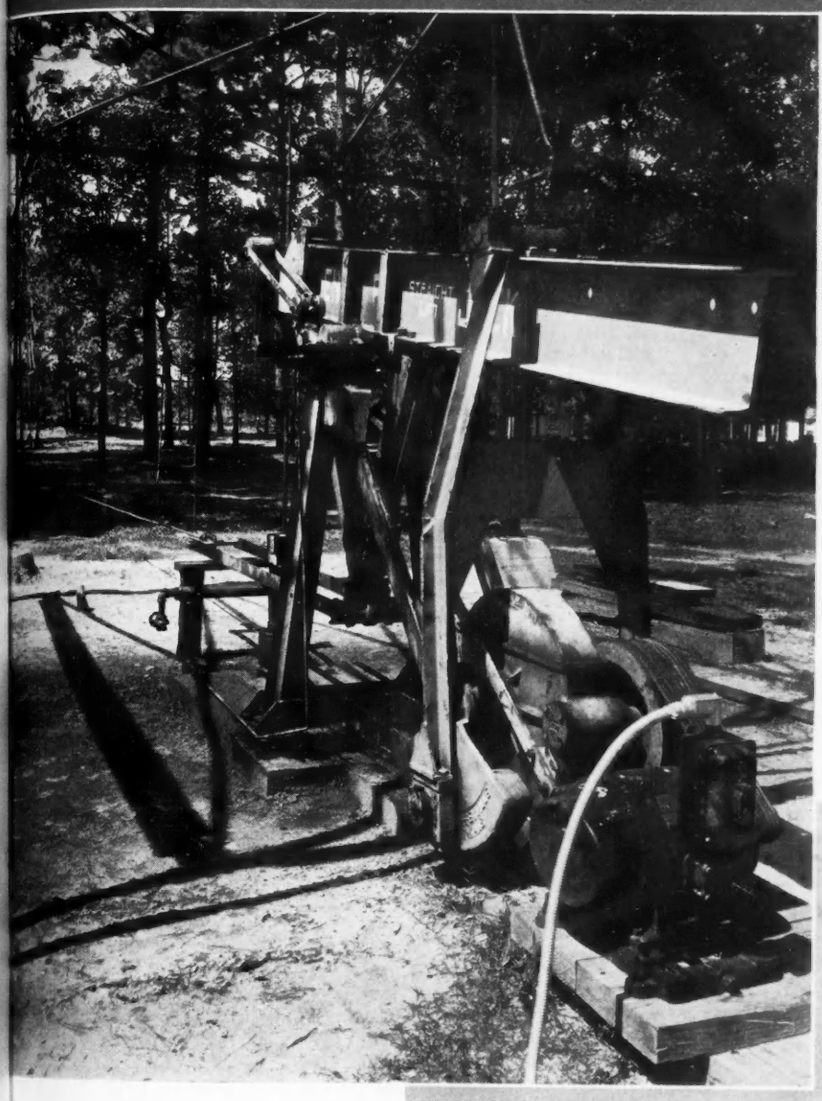

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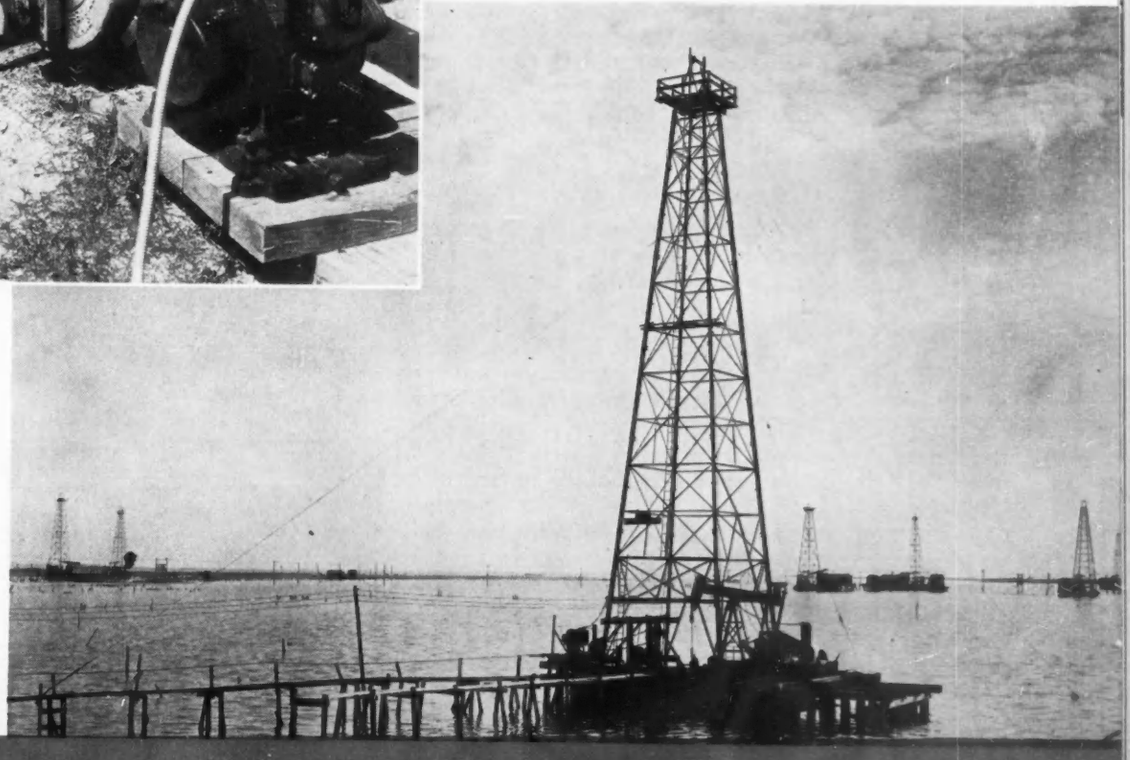

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# *Truncated Structures*

## CAUSE PHENOMENAL RECOVERIES

# *In Western Kansas*

**Thirty-four pools affected by local truncation in 12 counties.**

By JOS. A. KORNFELD

THE commercial significance of truncated structures in the accumulation of oil and gas in the Kansas fields has escaped serious attention other than isolated observations on "missing formations," "freak structure" or "mystery dome." They are local uplifts beveled by erosion and overlapped disconformably, with recurrent uplift.

Truncated structures, in the local example, have influenced production in more than 34 pools situated in 12 western Kansas counties. These occur on the Central Kansas uplift, on the Fairport anticline, on the Nemaha granite ridge, on the McPherson anticline; and on the Kingman anticline and the Beeler anticline—auxiliary structural features of Central Kansas.

This type of structure accounts for phenomenal initial yields, high ultimate recoveries, and high-gravity crude supplies.

### Associated With Faulting

Its occurrence, where observed in connection with regional granite ridges, is featured by local normal faulting of the en-echelon arrangement. This is true in the case of El Dorado in Butler County, Voshell in McPherson County, Drach in Stafford County. West of the Nemaha granite ridge in eastern Sumner County, structural horsts comprise the type structure at both Oxford and Churchill.

### Arbuckle "Islands" Prolific

Ancient exposure to leaching and ground-water action on former truncated "Arbuckle islands" in the mid-Carbonic seas has resulted in phenomenal initial yields on the crest of local structure. This is well exemplified in the El Dorado field of Butler County; the banner producer of the pool being completed from the "Stapleton" zone (Arbuckle) in September, 1917, for an initial production of 18,000 barrels per day. The well produced 2,225,000 barrels of oil before water encroachment ruined it. Recoveries in excess of 50,000 barrels of oil per acre have been recorded for the Shumway lease of Gypsy Oil Company (Gulf Oil Corporation), now abandoned. Highest initial production in the area was recorded at Cities Service Oil Company's Shriver 23, completed for an initial output of 23,000 barrels of oil per day. It produced 50,000 barrels of oil during the first 2½ days. Recoveries of more than 30,000 barrels per acre were

**Survey of Truncated Structures in Kansas**

| County | Pool | Location | Status | Missing Section |
|---|---|---|---|---|
| Butler | Elbing | 22-23s-4e | Producing | Mississippian |
| | El Dorado | 25-26s-4e-5e | Producing | Mississippian |
| | Hazlett | 24-4e | Producing | Mississippian |
| | South Augusta | 27-28s-4e | Producing | Mississippian |
| Barton | Beaver | 16s-12w | Producing | Viola-Sn.-Arb. |
| Ellis | Penney-Wann | 15-20w | Producing | Arbuckle |
| | Bison | 17-17w | Producing | Arbuckle |
| | Otis | 18-15w; 18-16w | Producing | Arbuckle |
| | Albert | 18-15w; 18-16w | Producing | Arbuckle |
| Ellsworth | Edwards | 17s-8w | Producing | Viola |
| Kingman | Kingman | 26s-7w | Abandoned | Viola |
| | Cunningham | 27-10w | Producing | Mississippian |
| McPherson | Voshell | 20-3w; 21s-3w | Producing | Mississippian |
| Marion | Covert-Sellers | 21s-4e | Producing | Mississippian |
| | Florence-Urschel | 21s-4e-5e | Producing | Mississippian |
| | Peabody | 22s-4e | Producing | Mississippian |
| Ness | Aldrich | 18-25w; 18-26w | Producing | Mississippian |
| Rice | Geneseo | 18-7w; 18-8w | Producing | Viola-Simpson |
| | Galt | 18s-7w | Producing | Viola |
| Russell | Gurney | 14s-14w | Producing | Arbuckle |
| | Fink | 14s-14w | Producing | Arbuckle |
| | South Gurney | 14s-14w | Producing | Arbuckle |
| | Hall | 14-13w | Producing | Arbuckle |
| | Berrick | 15-13w | Producing | Arbuckle |
| | Millberger | 14-14w | Producing | Arbuckle |
| | Williamson | 14-14w | Producing | Arbuckle |
| | Gorham | 14-15w | Producing | Arbuckle |
| | Harbaugh | 14-15w | Producing | Arbuckle |
| | Big Creek | 14-15w | Producing | Arbuckle |
| | Gideon | 15-14w | Producing | Arbuckle |
| Sumner | Churchill | 32-2e | Producing | Simpson |
| | Oxford | 32-2e | Producing | Viola, Simpson |
| Stafford | Drach | 22-13w | Producing | Simpson |

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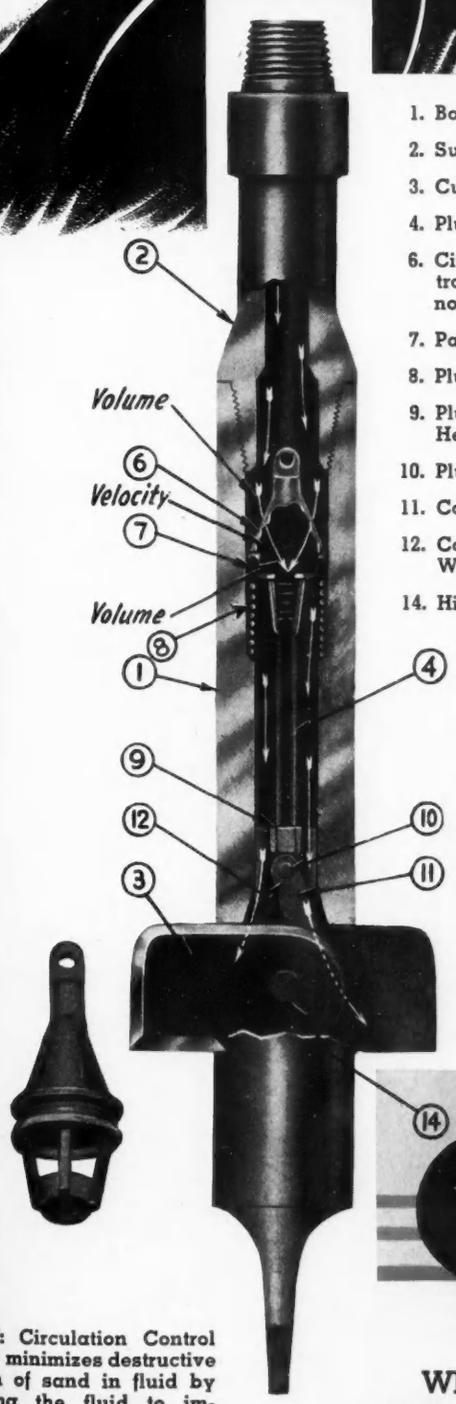


1. Body
2. Sub
3. Cutter Blades
4. Plunger Rod
6. Circulation Control Head (see note)
7. Packing Ring
8. Plunger Spring
9. Plunger Link Head
10. Plunger Link Pin
11. Connecting Link
12. Connecting Link Washer
14. Hinge Pin

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### Prolific Gorham Sand Production

In the Gorham pool of Russell County, the Gorham sand pinches out against the core of pre-Cambrian granite under the base of the Lansing-K. C. lime series in Sections 36, 10, 15, 16-14S-15W. Six Gorham sand wells owned by Central Petroleum Company of Wichita on the Joseph Witt fee in S½ SE¼ Section 3 have produced a combined output of 298,000 barrels of oil up to June 1, 1938, although the first oil was not produced until early in 1936, representing an average cumulative output per well of 49,666 barrels of oil per well.

### Oxford Production Prolific

One of the outstanding examples of a prolific truncated, faulted structure in southern Kansas is the Oxford pool of Sumner County. The area, situated in Township 32 South, Range 2 East, had produced more than 13,000,000 barrels of oil prior to January 1, 1938. At present there are 74 oil wells on production, of which 52 are finaled from the Arbuckle lime, 18 from the Stalnaker (Pennsylvanian) sand, and 4 from the Layton (Pennsylvanian) sand. Characteristic of the extremely high initial yields obtained from the Arbuckle lime is Amerada Petroleum Corporation and Sunray Oil Company's Gassaway 10, located in SW NW SE SW 14-32-2e; it was completed on August 30, 1935, for an initial production of 6874 barrels of oil in 24 hours from 2832 to 2901 feet. It was an old well drilled deeper from 1646 feet where it had been productive from the Pennsylvanian section. Structure of the Oxford pool, being a horst, comprises two major faults trending from northeast to southwest; displacement on the southeast fault has been measured at 594 feet on top of the Arbuckle lime marker.

Recoveries as high as 50,000 barrels per acre have been projected by engineers for some of the more prolific leases in the Churchill pool; average recovery being 24,500 barrels per acre. However, unlike Oxford, no production is obtained at or below the major unconformity between the Cherokee (Pennsylvanian) shales and the Ordovician (Simpson, Viola) formations; all production being obtained from Pennsylvanian formations including the Stalnaker sand and the Kansas City lime series.

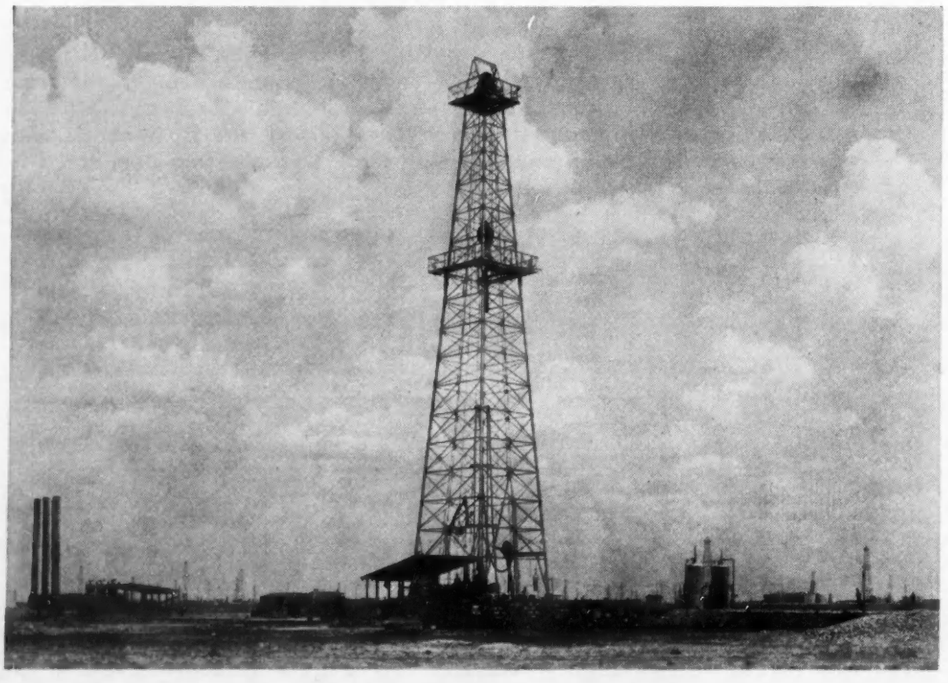
The discovery lease of the Churchill pool, the 69-acre Churchill tract produced 2,176,874 barrels of oil or approximately 31,548 barrels per acre in the three years since its discovery on July 12, 1926.

### Some Truncations Disappoint

In several scattered examples, truncation has proved a detriment rather than an advantage. Local truncation of the Simpson sand series in the southwestern sector of the Bemis pool of northern Ellis County has apparently served to reduce porosity in the underlying Arbuckle; consequently, Arbuckle lime wells completed in the vicinity of the Champlin Refining Company production in the southwest quarter require reacidization with large volumes of solution for successful completion. Normally 20 feet of Simpson series (green shales and saturated quartzitic sand) is encountered in adjacent areas.

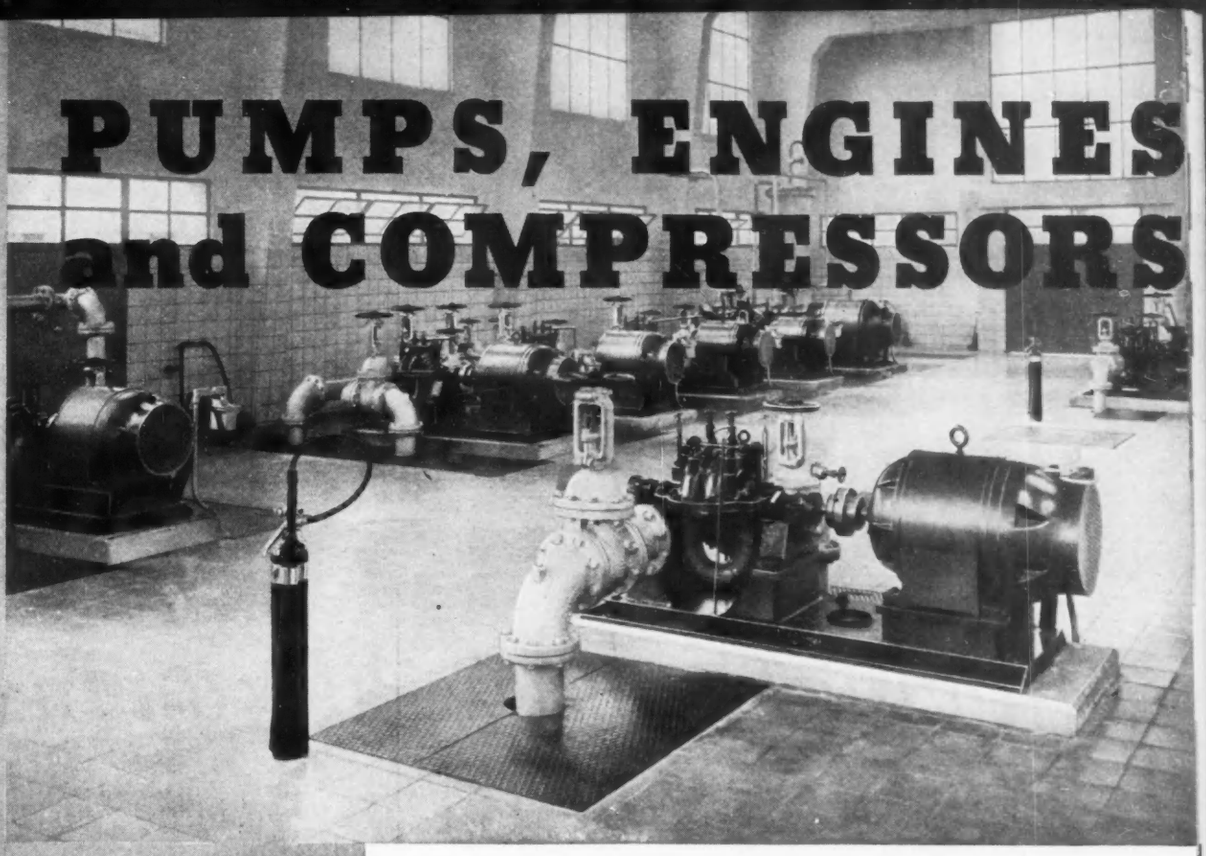
Similar geologic and production conditions are encountered in the south end of the Lorraine (Arbuckle) pool of southwestern Ellsworth County. One of the highest wells in the south portion, although geologically high, was completed for a small oil well.

Eleven dry holes were drilled in the vicinity of the abandoned discovery well of the old Kingman (Mississippian) pool in northern Kingman County. The discovery was completed on January 25, 1926, in Section 16-27s-7w, from 3876 feet. It produced 27,000 barrels of oil, ultimate production, before it was abandoned. No Viola lime formation was encountered in this sector.



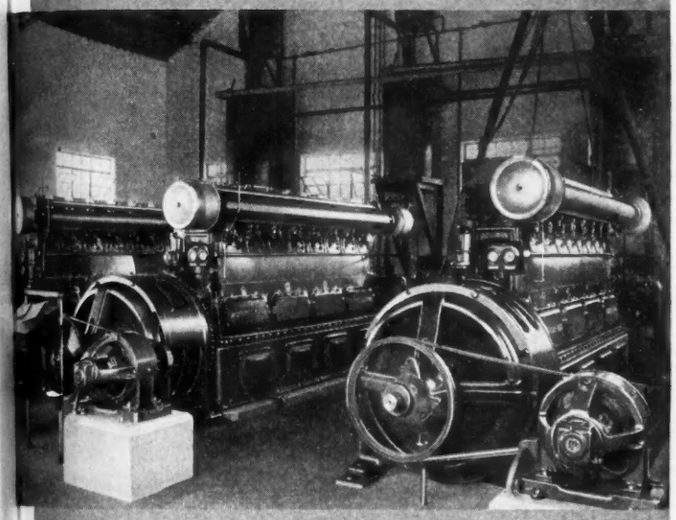
**The Bloomer field of Kansas during the height of its drilling boom.**

# PUMPS, ENGINES and COMPRESSORS

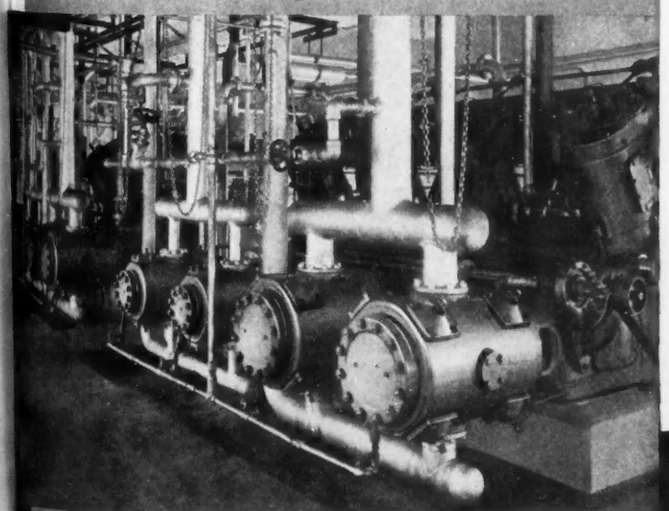


Cameron Refinery Pumps at the San Lorenzo Refinery.

# *All* in One Refinery . . .



Three 8-cylinder Type "S" Diesels which ran 8 months without interruption at San Lorenzo.



Three 8-cylinder XVG gas-engine-driven compressor units installed in the San Lorenzo refinery.

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**It is indeed significant that three of the vital units selected by the officials were of Ingersoll-Rand make. These units, (illustrated here), are multi-stage pumps, gas-engine-driven compressors and Diesel engines. All have given excellent service. The Diesels operated eight months without a stop.**

**San Lorenzo is another example where I-R gave an "all-around" refinery service. Many refineries have found that this undivided responsibility assures them of more efficient and more reliable operation.**

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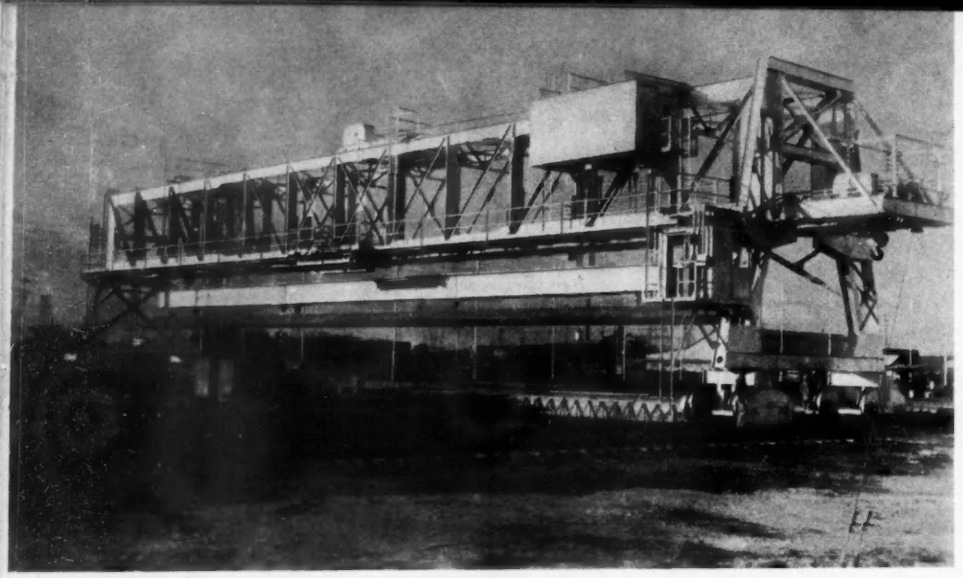


**The pile yard gantry crane of 50 tons capacity handles all the piles after they are poured, as well as assisting in the pouring of them. The pile shown in the lifting bar is 133 feet long, 24 inches square, and weighs 40 tons. It is a monolith. This yard has cast piles 155 feet long, but they were composite.**

# *Making Concrete Piles an Industry in Itself at Lake Maracaibo*

By WILLIAM V. GROSS, Foreign Editor

***(Written while making a tour of South American fields)***

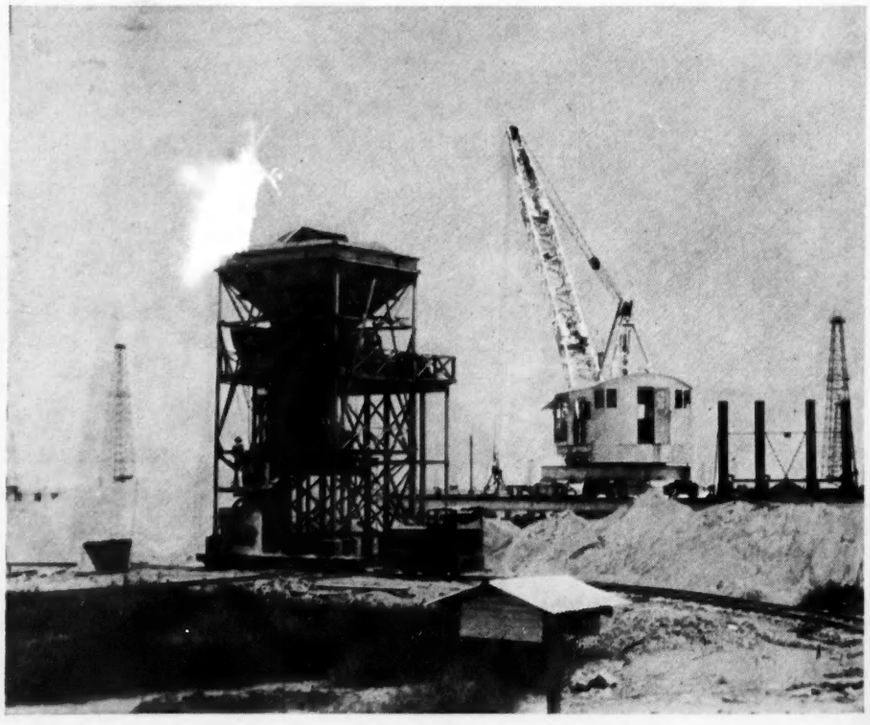
FOREIGN oil concession development forces a company into many types of business not ordinarily associated with drilling and production activities. Sometimes a sideline undertaking of large scale must be accomplished before ordinary routine can follow. And sometimes this type of undertaking calls for such a large outlay of cash as to add seriously to the lifting cost per barrels for years.

One such undertaking has been found a necessity on the shore of Lake Maracaibo. It is there that Lago Petroleum Company, in line with exploitation of leases in the lake proper, has had to build the largest oil-company-owned concrete pile-casting yard in the world.

One year's output for this plant was in excess of 184,000 feet of concrete piles. That is just a few feet short of 35 miles of it. The pilings are used not only for derrick foundations, but for flow stations, compressor stations, docks, and miscellaneous structures needed in a spot where practically all of the company's operations are carried on above the water.

The Venezuelan workers in the yard are proud of the fact that they are today casting the longest concrete piles in the world—133 feet. They are proud that the piles are doing the job successfully in supporting rigs drilling where the water is 51 feet deep.

All of the piles cast do not fall into the 133-foot class, and prac-



**Material for the concrete is transported to the yard by water and handled in a central plant.**

tically each set of derrick piling is tailor-made. No piles are cast for a derrick foundation anywhere in the lake until a test pile has been driven at the spot selected and the usual formation samples taken. Then the length and diameter of the piling to be used is determined. The test pile is driven at least 28 days before the piles for the specific job are barged out to the location.

Concreting materials for the piles are transported to the La Salina yard by water, the rock and sand being picked up at a spot 15 miles from the yard, the cement coming from a spot 40 miles away. There is a special dock for barges carrying these materials. It is immediately adjacent to the sand and rock pile, which in turn is adjacent to a double hopper.

A traveling crane equipped with a two-yard bucket picks the concrete up from the hopper and carries it to the casting forms, where the pouring, vibrating and part of the curing takes place. Incidentally, it takes much less time to cure the large monoliths at La Salina than it would in the United States, because of the warm, even climate. About 28 days is the average.

For assisting in the pouring and transporting the hardened piles from the forms to the storage yard, there is a large 50-ton gantry type crane. Parallel tracks on which this crane runs are spaced 150 feet apart and are 2000 feet long. At one end of them is the casting form division of the layout. Then comes the pile storage yard, and then the dock for pile barges, so that the one gantry can serve several purposes, including dropping the piles aboard the barges used to convey them out to location.

Once at location a special crane lifts the piles and drops them into position in the pile driver, which is installed on a barge 60 by 110 feet. After the piles are driven, a special crew is used to cut them off and level them up. Then the cap forms, tying the members of a cluster together, are poured. There is a barge for this purpose outfitted with the necessary equipment for mixing and pouring.

After the caps have hardened sufficiently, the steel derrick floor, assembled into one piece ashore, is barged out and installed in position to finish the job and give a complete derrick foundation, ready for derrick and rig.

**Pouring, vibrating and curing the large piles. Pouring generally takes 30 minutes on a 133-foot pile, though it has been done here in less time.**

**A section of the storage yard where curing takes place. The tracks for the gantry are shown at the left, as well as the smaller track for the auxiliary crane which runs from hopper to pouring forms.**

**Below is a crew winding up the job of cutting off and leveling the pile clusters and starting construction of the cap forms.**

# *Status of Exploration in Florida Not Conclusive*

By PAUL THOMAS, Geologist

**Florida has not as yet produced any commercial oil, but the fact that some of the major companies consider it to be a favorable area is evidenced by the geophysical activity which they are carrying on there at the present time. This article is concerned with a summary of the amount of drilling which has been done there and with some notes on the geology of the area.**

| Number on Map | DRILLED BY | County | Total Depth |
|---|---|---|---|
| 1 | Ocala Oil Corp | Marion | 6180 |
| 2 | Oil Development Co | Lake | 6126 |
| 3 | East Coast Oil and Natural Gas Co. | Dade | 5353 |
| 4 | Oil City Corp | Walton | 5375 |
| 5 | Mrs. Mamie Hammonds, et al | Jackson | 5022 |
| 6 | Chipley Oil Co | Washington | 4912 |
| 7 | Miama-Florida Oil Co. | Dade | 4570 |
| 8 | Florida Pioneer Oil Co. | Polk | 4545 |
| 9 | St. Marys River Oil Corp. | Nassau | 45107 |
| 10 | J. S. Cosden, Inc. | Marion | 4434 |
| 11 | Suwannee Petroleum Co. | Levy | 4010 |
| 12 | Dundee Petroleum Co | Sumter | 3090 |

(Data from Florida Geological Survey.)

RECORDS of the Florida Geological Survey show that 80 wildcats have been drilled in the state since 1900. The distribution of these wells with regard to total depth is as follows:

| Total Depth in Feet | Number Wells |
|---|---|
| Less than 1000 | 32 |
| 1000-2000 | 22 |
| 2000-3000 | 8 |
| 3000-4000 | 7 |
| 4000-5000 | 6 |
| 5000-6000 | 3 |
| 6000-6200 | 2 |

The locations of the 11 wells in the state which have been drilled below 4000 feet are shown on Figure 1. The twelfth well on Figure 1 is one which is referred to later in the article.

The deepest well yet drilled in Florida was the Ocala Oil Company's well (No. 1 on Figure 1) which was located about five miles south of York in Marion County. It was abandoned at 6180 feet in basement rock.

### The Geological Column

Figure 2 is a condensed Tertiary and Upper Cretaceous geological column for Florida and Alabama. The Alabama column is included because the subsurface section of western Florida is similar to the section of southern Alabama.

*Peninsular Florida*—The subsurface stratigraphy of peninsular Flori-

**Figure 1**

**Outline map of Florida showing regional structures and location of deeper wildcats.**

# NEOPRENE

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da has not been worked out, but an inspection of the well logs in this area gives an idea of the nature of the rocks in the section, which is more important from the standpoint of petroleum geology than the relative ages and positions of the different formations.

The log[1] of Dundee Petroleum Company's well in Sumter County (No. 12 on Figure 1) is quite typical of logs of wells drilled in peninsular Florida. It shows that this well was drilled to a total depth of 3090 feet through a section which was almost solid limestone. Such a section is not favorable to the formation and accumulation of petroleum, but additional drilling may uncover a more favorable section between that depth and basement rock.

*Western Florida*—The geological column of western Florida is very different from that of the peninsula. It is a section of alternating marine and continental deposits, and it offers much more favorable conditions for the formation and accumulation of petroleum.

Chipley Oil Company's Dekle 1 in Washington County (No. 6 on Figure 1) showed the following section:[2]

Jackson group—260′ of limestone with some calcareous sand toward base.

Claiborne group—525′ of calcareous, glauconitic sand with some limestone and marl.

Wilcox and Midway groups—1420′ of calcareous sands and clays.

Upper Cretaceous series—2210+′ of dark sands and clays.

A comparison between this section and the equivalent Alabama section in Figure 2 shows a thickening of the Eocene beds downdip.

## Structure

Little is known regarding the subsurface structure of Florida. Surface mapping has shown the existence of two large uplifts in or partially in the state. (See Figure 1) They are the Ocala uplift in northwestern peninsular Florida and the Marianna uplift in Florida, Alabama and Georgia. The Live Oak dome is a smaller structure lying north of the Ocala uplift. Dips on the flanks of these structures are gentle.

Structures of this magnitude are not necessarily favorable traps for petroleum, although smaller highs on the tops of the larger uplifts might form very satisfactory traps if the permeability of the rocks is sufficiently high to allow the migration of petroleum.

Sixteen dry holes have been drilled on the Ocala uplift and four have been drilled on the Marianna uplift in Florida. Three or four shallow wells have been drilled on the Marianna uplift in southwestern Alabama, but none have been drilled on it in Georgia. The first test on the Live Oak dome is now in progress[3].

## Conclusions

Eighty wells for an area as large as the state of Florida can hardly be considered a satisfactory test, but they may serve as a basis for a rough estimate of what may be expected in the future.

The section in peninsular Florida is not particularly favorable to the accumulation of oil in commercial quantities. If oil is found there, is will probably be below the marine limestone section.

Western Florida presents a more favorable section. The amount of exploration in this area in the future will probably be closely related to developments in eastern Louisiana, Mississippi and Alabama.

### Footnotes:

[1] Data from "Review of Structure and Stratigraphy of Florida with Special Reference to Petroleum Possibilities," by Stuart Mossom, 17th Annual Report of Florida Geological Survey, 1926, pp. 226-229.

[2] Ibid, pp. 195-206.

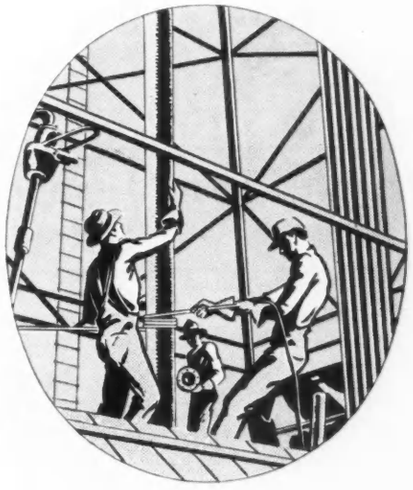
[3] Written Communication from Herman Gunter, Florida State Geologist.

**FIGURE 2**

**Tertiary and Upper Cretaceous Geological Column**

| EPOCH | | | SOUTHERN ALABAMA Formation | Thickness | REMARKS | FLORIDA Formation | Thickness | REMARKS |
|---|---|---|---|---|---|---|---|---|
| TERTIARY | Miocene | | Pascagoula clay | 250–1000′? | Found only in wells in SW Ala. | Choctowhatchee group | 20–50′ | Marls—mainly in W. Fla. |
| | | | Hattiesburg clay | 325′? | Exposed only in SW Ala. | Alum Bluff group | 220′ | Sands, limestones, marls and cont. deposits |
| | | | Catahoula fm. | 300–1000′ | Light sands and clays | Tampa limestone | 100′ | Equals Chattahoochee of W. Fla. |
| | Oligocene (Vicksburg group) | | Byram marl | 30′ | Marls and clays | Byram marl (?) | .... | |
| | | | Glendon limestone | 15–100′ | Crystalline limestone—thickest in E. Ala. | Glendon limestone | 150′ | In W. Fla. only |
| | | | Marianna limestone | 0–90′ | White porous limestone | Marianna limestone | 50′ | Limited exposure |
| | | | Red Bluff clay | 0–30′ | Clays and marls—absent in E. Ala. | | | |
| | EOCENE | Jackson | Ocala limestone | 40–100′ | White limestone and marl—E.Ala. | Ocala limestone | 150–400′ | |
| | | | Jackson fm. | 20–170′ | Clays—thickest in W. Ala. | | | |
| | | Claiborne | Gosport sand | 0–35′ | Fossiliferous greensand and sandy marl—absent in E. Ala. | | | |
| | | | Lisbon fm. | 50–85′ | Calcareous sands, clays and Marls—170′ thick in E. Ala. | | | |
| | | | Tallahatta fm. | 20–300′ | Claystones and sandstones—highly siliceous | | | |
| | | Wilcox | Hatchetigbee fm. | 150–300′ | Sandy clays—lignitic in part | No Outcrop | | |
| | | | Bashi fm. | 80–125′ | Marls and lignitic sands and clays | | | |
| | | | Tuscahoma fm. | 104–170′ | Sands, greensands, clays and marls | | | |
| | | | Nanafalia fm. | 125–200′ | Clays, sandy clays and sands | | | |
| | | Midway | Naheola fm. | 125–150′ | Sands and sandy clays | | | |
| | | | Sucarnoochee fm. | 90–120′ | Dark, calcareous clays, sands and limestones—absent in E. Ala. | | | |
| | | | Clayton | 0–200′ | Limestone—absent in W. Ala. | | | |
| UPPER CRETACEOUS | | | Ripley fm. | 1000′ | Marine sands, clays, marls and sandy limestones—thickest in E. Ala. | | | |
| | | | Selma chalk | 900′ | Chalky limestone—merges into Ripley fm. to east | | | |
| | | | Eutaw fm. | 450′ | Glauconitic sands, clays and lignitic clays | | | |
| | | | Tuscaloosa fm. | 1000′ | Sands, clays and gravels | | | |

**Sources:** Alabama—Spec. Report No. 15, Ala. Geol. Surv., pp. 207-8.
Florida—20th Ann. Report and Bulls. 8 and 9, Fla. Geol. Surv.



*The Layne & Bowler Company*

WISHES YOU

# A MERRY CHRISTMAS

AND

# A HAPPY NEW YEAR

# WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

## Canadian Situation

### Proposal for conservation law starts row in Alberta; freight rate on eastern movement may be arranged

On a 16-hour test last week, Home Oil Company, Ltd's Millarville 2, legal Subdivision 6, Section 33, Township 20, 3-5w, 12 miles north of production in the Turner Valley field of Alberta, Canada, flowed steadily at the rate of 25 barrels an hour with a low gas/oil ratio from the upper horizon of the Madison limestone. Bottom-hole pressure is 2955 pounds to the square inch, compared to less than 2000 pounds at the largest wells to the south.

Reporting on the results of the test, Dr. J. O. G. Sanderson, company geologist, said: "The flow at the Home well was started through the separator. This flow was through the tubing and the gas was restricted to about 500,000 cubic feet per day. The well proceeded to produce crude oil uninterruptedly through the separator. The rate of production under the restricted gas flow has been 25 barrels per hour. The conditions under which the well is flowing will be varied experimentally before the tubing test is completed. Company officials have been quite agreeably surprised by the performance at the well under the conditions which prevail.

"The well has not been cleaned out and the flow has probably been hampered by cavings of the soft dolomitic limestones," Dr. Sanderson added. "It has not had the assistance of introduced gas nor has any dissolving medium or acid been applied to the well. It is also possible that the position of the foot of the tubing could be reset to the advantage of the flow. The oil being produced is of 41-gravity."

Drilling was to be resumed this week, with about 100 feet of hard intermediate zone expected before an anticipated 50 feet of lower porous lime. If conditions are found to be similar to crude wells on the southwest flank, larger production will be found from the lower horizon. Present bottom is at 8237 feet.

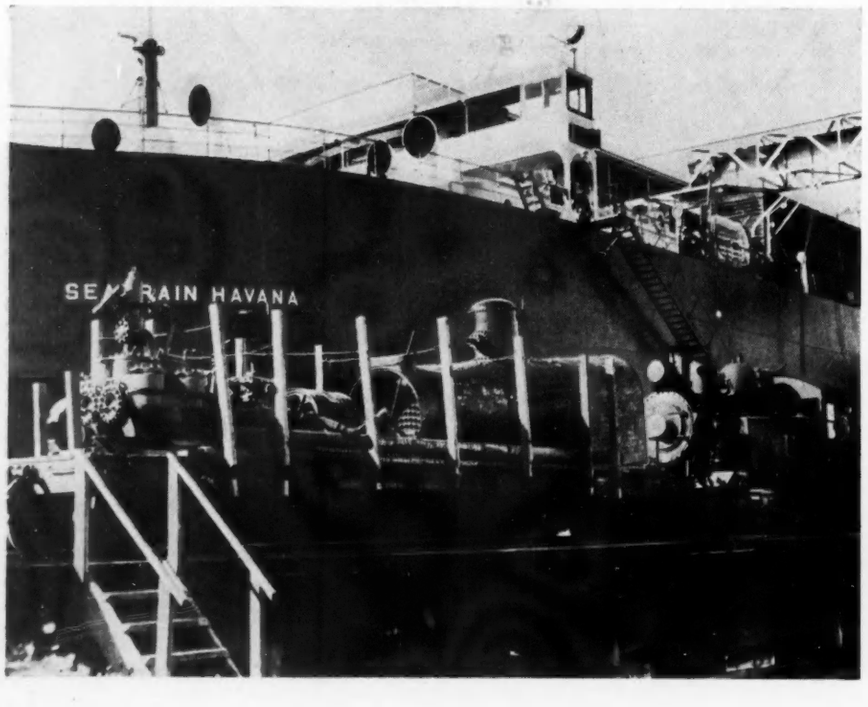
The high bottom-hole pressure at the outpost is believed to indicate considerable extension of the crude area to the north of the new well. The structure, according to Dr. H. S. Hume, Dominion geologist, extends 7 miles northwest of the strike.

After swabbing water for several days, Okalta Oils, Ltd.'s 6, Legal Subdivision 3, Section 30, Township 18, 2-w5, 1½ miles west of production on the southwest flank, was about ready for a production test of the upper Madison porous lime horizon. The swab was bringing up both oil and water late last week, but it was believed that water had seeped back into the oil formation for some distance and it was planned to continue swabbing until all water was exhausted before treating with acid.

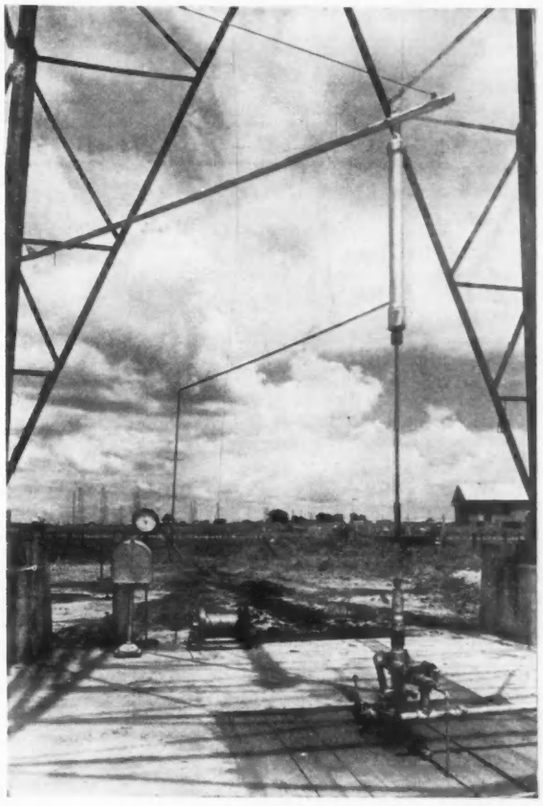
Besides possibly furnishing a large extension to the southwest flank producing area, this test is attracting additional attention as the deepest hole to be drilled in the British Empire. Bottom is at 10,200 feet. While salt water was found in the lower lime, operators believe this has been successfully cemented off and that a commercial well may be made in the upper horizon.

#### Refinery to Help

Encouragement was given Turner Valley operators last week with announcement that construction was starting immediately on a $300,000 addition to Imperial Oil Company, Ltd.'s refinery at Regina to increase its production capacity for Alberta crude from 6000 to 9000 barrels daily. The project is to be completed by spring. A $500,000 expansion program for the company's Calgary refinery was announced some months ago, but no indication




**Drilling equipment to be employed by The Atlantic Refining Company in Santa Clara Province, Cuba being unloaded from the sea train at Havana. It is expected that Atlantic's first well will be spudded in before the end of the month. Atlantic holds concession titles to several hundred thousand acres on the island and since last June, following passage of new petroleum legislation by the Cuban Congress, has been carrying on an intensive program of seismographic and other exploratory work. In addition to the drilling crew, two seismographic crews and a gravity meter crew are now in the field.**



# CONTROLLED PRODUCTION

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has been given as to when work will start.

In line with westerly producers on the southwest flank, Command Oils, Ltd.'s 1, Legal Subdivision 14, Section 29, Township 18, 2-w5, produced at the rate of 1000 barrels a day after acid treatment last week. It was being prepared for government allowable test. Bottom is at 7844 feet. All available trucks in Turner Valley were recruited last week to move the heavy duty rotary rig and equipment from the Command well to a location on the Steveville structure for a wildcat test by Petroleum Investments, Ltd. A total of 33 trucks were used to haul the boilers, rig timbers, machinery, drill pipe and first string of casing, a total load of 300 tons transported for 260 miles.

Offsetting Royalite Oil Company, Ltd.'s 28 on the west and Davies Petroleums, Ltd.'s 4 on the north, Harris 2 was spudded in last week on Legal Subdivision 15, Section 32, Township 18, 2-w5. This operator's No. 1, south of the Highwood River on Legal Subdivision 13, Section 9, Township 18, 2-w5, was drilling at 1120 feet. The Sunset Harris operation was the third [illegible] Turner Valley well to spud this month.

Ventures 1, Legal Subdivision 14, Section 32, Township 18, 2-w4, was being rigged up by Newell & Chandler, drilling contractors, and was to spud in this week. A fifth Turner Valley test that may get under way before the end of the month is Inland Development Company's 1, Legal Subdivision 16, Section 18, Township 18, 2-w5, which was waiting on equipment from Okalta Oils, Ltd.'s 6.

Guardian Oil Company, Ltd.'s wildcat on the Pouce Coupe structure, in extreme northwestern Alberta, has cemeted casing at 2500 feet. Operators are having difficulty with water and are considering closing down for the remainder of the winter. Location of the wildcat is Section 7, Township 80, 12-w6.

## *Details published on Venezuelan oil deal*

Newspaper reports out of New York last week stated that N. V. Nederlandsche Olie Maatschappij, a company of the Royal Dutch Shell group, under an agreement as of November 30, had purchased from International Petroleum Company, Limited, for approximately $50,000,000, one half of International's 50 percent interest in the Venezuelan crude oil production of Mene Grande Oil Company.

It was further stated that International Petroleum Company, Limited, an indirect subsidiary of Standard Oil Company of New Jersey, had contracted December 15, last year, for the 50 percent of the crude production of Mene Grande Oil Company, subsidiary of Gulf Oil Corporation, in Eastern and Western Venezuela, for a consideration of $100,000,000. International, in turn, sold one half of that interest to the Shell subsidiary at cost, it was stated, under the agreement of November 30, with the sale retroactive to December 15, 1937, the date when International paid $25,000,000 cash to Mene Grande.

# Mexican Situation

**United States ambassador will inform President Roosevelt of latest oil developments in Mexico**

## *President Roosevelt to get Mexican oil report*

Latest developments in the Mexican oil situation will be reported to President Roosevelt this week by Josephus A. Daniels, United States ambassador at Mexico City.

The ambassador called upon the President last week, but the latter postponed discussion of the Mexican situation until after Christmas after he had been told by Daniels that the matter now was "relatively quiet" pending a decision by the Mexican Supreme Court due some time in March.

Sales by Mexico of oil allegedly taken from expropriated American properties is being watched with interest in Washington, it was indicated, although the state department has made it known that it was not concerned with any action taken by the Mexican government to dispose of oil from Mexican owned wells.

When he returns to Washington from a holiday trip it is understood Ambassador Daniels will acquaint the President with the arrangement said to have been entered into by W. R. Davis and Company, involving about $17,000,000 worth of oil which Daniels said would be sold by the purchasers wherever a market could be found. The ambassador explained that it was understood the purchasers had entered into an agreement with Germany for the exchange of at least some of the oil for oil field and irrigation machinery and equipment.

Although he had been keeping in close touch with the oil situation, the ambassador, before he returned to Washington from Mexico City, was asked by Acting Secretary of State Sumner Welles to investigate reports that Mexico had entered into a deal with Germany involving $25,000,000 worth of oil.

It was indicated in Washington that the department is not concerned with sales of Mexican owned oil, but is interested in the disposal of any oil from American properties prior to the making of an adjustment with the American companies concerned.

The United States Government has not yet pressed for a settlement of the claims of the oil companies.

"The oil companies have perfected their final appeal to the Mexican Supreme Court," Daniels explained, "in order to preserve their rights, and it is expected that a decision will be handed down sometime in March. That will be the last of the litigation, and it will depend upon the verdict of the court as to what will be the next steps.

"If the companies are upheld in their contentions, there will be nothing further to be done. If the reverse occurs, it is then a matter for the state department to negotiate, of course. In the meantime, there is nothing going on."

## *Mexican tracts ordered into federal reserves*

President Lazaro Cardenas of Mexico has ordered incorporated into the federal oil reserves 5800 acres of lands in El Cristo, Tempoal municipality, and El Sueno and El Escalon, Chiconamel municipality, Vera Cruz state, oil tracts, with rejection of the application for confirmatory concessions by the Mexican Oil & Coal, a Huasteca (Standard of New Jersey) subsidiary.

### Convention Plans

Delegates to the general convention that is being arranged to discuss problems of the oil workers will be true representatives of the workers but not "agitators in the pay of the expropriated companies," and the real condition of the industry will be revealed at the meet, according to the executive committee of the national oil workers' union.

### Ask Return of Funds

Refunding of contributions they made to the fund the federal government started to indemnify the expropriated oil companies has been asked of President Cardenas by Section 15 of the union of employees of the central department of the Federal District. The petitioners argue that as the government said that these contributions are no longer necessary, money they thus contributed should be refunded to them.

## *U. S. principal supplier of petroleum to Denmark*

Although Denmark is comparatively unimportant as a consumer of paraffin wax and petroleum products, consumption has nearly doubled during the past seven years, according to a report to the Department of Commerce from the office of the American Commercial Attache at Copenhagen.

The United States has been the principal supplier of these products to Denmark for some years. It is estimated that paraffin wax imports are now in the vicinity of 1200 tons annually, and that between 125 and 160 tons of petroleum jelly are imported each year. About 500 to 600 barrels of petroleum used for greasing purposes, are imported annually the report stated.

The Danish dairy industry is said to be the largest user of paraffin wax, in connection with the export packing of cheese and butter. It is also used by the tanneries, the meat packing industry, the lard industry, cosmetic manufacturers, and for floor polish, according to the report.

# MEN IN THE INDUSTRY'S NEWS

## J. C. HUNTER ELECTED PRESIDENT OF THE MID-CONTINENT OIL AND GAS ASSOCIATION

### J. D. COLLETT, PRESIDENT FOR PAST SIX YEARS, IS NAMED CHAIRMAN OF THE BOARD

J. C. HUNTER, vice president of Grisham-Hunter Corporation, Abilene, Texas, was elected president of the Mid-Continent Oil & Gas Association at its annual meeting in Tulsa, December 19.

An amendment to Article I of the by-laws was made to create the position of chairman of the board and J. D. Collett, O'Keefe & Collett, Fort Worth, who has been president of the organization for six years was elected to that position.

Robert S. Kerr, president of Kerlyn Oil Company, Oklahoma City, was elected first vice president.

The following officials were reelected: vice president for Oklahoma, F. O. Prior, Stanolind Oil & Gas Company, Tulsa; vice president for Texas, W. H. Francis, Magnolia Petroleum Company, Dallas; vice president for Louisiana-Arkansas, D. W. Harris, Arkansas Natural Gas Corporation, Shreveport; vice president for Kansas, Ralph Pryor, Pryor and Lockhart, Wichita; vice president for New Mexico, Van S. Welch, Artesia. Clarel B. Mapes, Tulsa, was reelected secretary-treasurer.

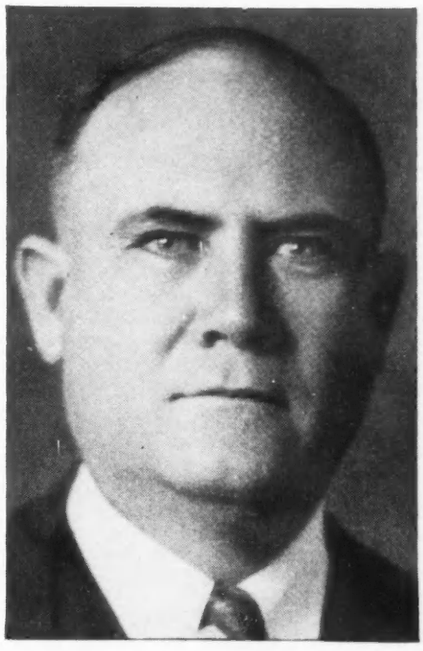
The association authorized formation of a Standing Committee on Social Security Matters and John E. Winslow, Shell Petroleum Corporation, St. Louis, was named general chairman, with R. M. Chan, Magnolia Petroleum Company, Dallas, vice chairman.

Another committee authorized by the board of directors was a Standing Committee on Wage and Hour Laws. The president appointed Raymond M. Myers, Magnolia Petroleum Company, Dallas, as its chairman and Forrest M. Darrough, Carter Oil Company, Tulsa, as vice chairman.

The new president of the association has been active in oil association affairs in Texas in recent years. In 1937 and 1938 he held the following positions: president of the West-Central Texas Oil & Gas Association, director of the Independent Petroleum Association of America, vice president of the Mid-Continent Oil & Gas Association and one of its directors.

He got into the oil business in 1926, when he became vice president of Grisham-Hunter Corporation. He is president of the Gregg Oil Company, Gladewater, president of Brown Eagle Oil Company, Abilene, vice president of S. B. Roberts Company, Abilene, and a director of Citizens National Bank of Abilene.

Hunter is a native Texan, being born at Thurber. After finishing high school at Miles, Texas, he entered Howard Payne University, Brownwood, and after graduation there attended the University of Texas. He taught school at Mertzon and at Van Horn. Then he was elected treasurer of Culbertson County, Texas. He entered banking as vice president and cashier of Van Horn State Bank. Then followed six years as county judge of Culbertson County. He was vice president of First National Bank of Pecos, Texas, until he entered the oil business in 1926.



**J. C. HUNTER**

**D. C. TAYLOR,** Barnsdall Oil Company, has been elected president of the Purchasing Agents Association of Tulsa for 1939. Other officials are H. E. Kaiser, Phillips Petroleum Company and J. S. Hawley, Stanolind Oil & Gas Company, vice presidents; W. F. Taylor, Bethlehem Supply Corporation, secretary-treasurer; M. F. Bridges, Tide Water Associated Oil Company, national director; H. M. Cosgrove, executive secretary; E. R. Welch, assistant secretary.

**HOWARD HOOPER,** scout for Phillips Petroleum Company, Houston, was married December 21, at Caspiana, Louisiana, to Miss Hutchinson. Hooper's best man was nervous Sid Binion, assistant chief scout for Shell Petroleum Corporation, Houston, Texas. The married couple will live in Houston.

**AXTELL J. BYLES,** president of American Petroleum Institute, New York, was in Houston last week on pleasure and business.

**JOSEPH E. MORERO** and A. L. Cashman, chief geologist and superintendent of the land department, respectively, of Skelly Oil Company, Tulsa, visited the company's West Texas headquarters at Midland the past week, making the trip by plane.

**GORDON W. HEID,** assistant district geologist for the Shell Petroleum Corporation in West Texas and New Mexico, with headquarters at Midland, and Mrs. Heid are vacationing in San Francisco.

**W. F. (BILL) HANAGAN,** West Texas wildcatter, returned to Midland, Texas, headquarters last week after spending several months surveying the situation in Illinois.

## BURT R. BAY ELECTED PRESIDENT OF NORTHERN NATURAL GAS COMPANY AS FRANK H. BROOKS RETIRES

### JOHN MERRIAM AND A. B. C. DILWORTH ALSO ADVANCED

BURT R. BAY, who has been executive vice president, was elected president of Northern Natural Gas Company, effective January 1, at the annual board of directors meeting. He succeeds Frank H. Brooks, who retires.

The board of directors also promoted John F. Merriam, assistant to the president, to secretary-treasurer in addition to continuing his post as assistant to Bay, and A. B. C. Dilworth, general auditor, was named comptroller and assistant treasurer.

Bay, the new president, has had a long and successful career in the natural gas industry, being identified with it in all its phases for more than 30 years. Immediately prior to becoming the executive vice president and a director of Northern Natural Gas Company last July 31, he was vice president and general manager of Panhandle Eastern Pipe Line Company at Kansas City, Missouri.

He had a background of 15 years of service with natural gas subsidiaries of Cities Service Company, principally those in the Empire Gas and Fuel Company group at Bartlesville, Oklahoma, when he joined the Missouri-Kansas Pipe Line Company at the time it was organized in 1929 to serve as its vice president and general manager. The company then operated natural gas properties and a pipe line system in the vicinity of Kansas City, Missouri.

Shortly thereafter, the company organized Panhandle Eastern Pipe Line Company to construct a pipe line system from Amarillo, Texas, and Hugoton, Kansas, gas fields to markets in Kansas, Missouri, Illinois, Indiana and Michigan, and Bay had an important part in its

planning and construction of these pioneer lines to transmit gas over long distances from gas fields of the Southwest.

Brooks' retirement is in conformity with the established policy of the company under its age limit and income retirement plan. His resignation from the presidency of Northern Natural Gas culminates nearly 45 years in public utility service which he started when he entered the service of the street railway company in Erie, Pennsylvania, his native city.

Prior to leaving the presidency of Iowa-Nebraska Light and Power Company in Lincoln, Nebraska, in 1931 to head the Northern Natural Gas Company at Omaha, Brooks had become nationally prominent in the public utility field through his successful administration of several electric, gas, and street railway companies.

Under his direction Northern Natural Gas Company developed into one of the major natural gas pipe line systems of America, serving more than 130 cities and towns in Kansas, Iowa, Nebraska, South Dakota and Minnesota. In addition to its pipe lines carrying gas from the Texas fields, the company also operates People's Natural Gas Company, serving cities and towns in Nebraska, South Dakota and Iowa; Minnesota Northern Natural Gas Company operating in Minnesota; Argus Pipe Line Company and Garden City Gas Company, in Kansas.

Headquarters and general offices for the entire system are maintained in Omaha.

**R. H. MAPLES,** staff engineer of the Production Division of the American Petroleum Institute, Dallas, will be in Tulsa December 28 for the meeting of the Northeastern Oklahoma chapter of the A.P.I.

**A. I. LEVORSEN** was the speaker before the Tulsa Geological Society at a special night meeting December 19. His subject was "Some Frontiers of Petroleum Geology."

**DR. GUSTAV EGLOFF** of Universal Oil Products made an address December 15, 1938, at Ohio State University under the auspices of the Ohio State University Research Foundation. Dr. Egloff's subject was "More and Better Gasoline."

**PROFESSOR E. V. O'ROURKE** of the Department of Mining Engineering at Ohio State University addressed the Faculty of the College of Commerce recently on "Investments in Integrated Oil Companies."

**EDWARD L. SHEA,** executive vice president of the Tide Water Associated Oil Company, New York, has been elected a director of the North American Company.

**M. J. KEOUGHAN,** general manager for W. W. Duncan, Texas and Illinois operator, was in Evansville, Indiana, last week.

**H. H. "HAP" HENSLEY,** manager of the Valley Pipe Line Company, last week was named vice president of the McAllen, Texas, chamber of commerce and president of the Kiwanis Club.

**J. H. CHESTER,** petroleum geologist with the Chester Oil Company, last week was in Evansville, Indiana.

**M. R. SPRINGER,** division manager at Little Rock for Lion Oil Refining Company, has been named chairman of the Arkansas Petroleum Industries Committee, succeeding M. W. Edington, state manager for Gulf Refining Company. L. F. Clark, division manager for Arkansas Fuel Oil Company, Little Rock, was elected vice president, and W. F. Scarbrough, Little Rock, was re-elected secretary.

**JUDGE W. BLODGETT PRIEST,** St. Louis, Missouri, operator, and Mrs. Priest have left for a vacation at Miami, Florida. They were in Southern Illinois and Indiana for a few weeks prior to their departure for the Southeast.

**JOSEPH B. CRAWFORD,** Tulsa operator, toured the tri-state area about Evansville, Indiana, and Owensboro, Kentucky, last week with Perry Franklin, Los Angeles.

**J. H. McCLURKIN,** petroleum geologist of Bowling Green, Kentucky, was in Evansville, Indiana, last week. McClurkin is recognized as an authority on geology of the southern section of the Illinois basin area.

**GRANT J. SPRATT,** R. E. Trammel, W. Boyd and J. O. G. Sanderson have been named a committee of the Alberta Petroleum Association to make a special study of repressuring proposals for the Turner Valley field.

**L. J. "LARRY" BATEMAN,** scout for Sun Oil Company in Southern Indiana, Western Kentucky and Southern Illinois, left last week for his home in Philadelphia. He plans to return to the Illinois basin area January 3.

**R. E. WALCHER,** assistant traffic manager for Globe Oil & Refining Company, has been named president of the Traffic Club of Wichita.

**H. J. MITCHELL,** L. L. Dudar and R. D. Swan last week organized the Mid-States Refining Company as an Illinois corporation with headquarters in Joliet.

**BRIG. GEN. VICTOR W. ODLUM,** Vancouver, British Columbia, vice president of Home Oil Company, Ltd., and T. A. Keyes, of Calgary, Alberta, were overcome when gassed at the Home Company's Millarville 2 in the north Turner Valley field of Alberta last week. The accident which rendered both men unconscious for about 20 minutes, occurred when the well was turned on to the separator for a test.

**C. F. FRAZIER,** Joe Slivka and Ruth K. Frazier last week organized the Marvel Oil Company as an Illinois corporation. Headquarters have been established at 632 West Broadway, Centralia.

**SIR ANDREW AGNEW** will succeed Lord Bearsted as chairman and director of Venezuelan Oil Concessions, London, when the latter's resignation becomes effective December 31.

**GUY JENNINGS,** Oklahoma operator, was in Evansville, Indiana, last week while touring the Illinois basin area.

**JOHN HARWOOD,** Kansas operator and president of the Harwood Drilling Company, was ill in a Wichita hospital last week.

## *Reistle heads Institute program committee for 1939*

C. E. Reistle, Jr., of Humble Oil & Refining Company, Houston, Texas, has been appointed 1939 chairman of the Program Committee of the American Petroleum Institute's Division of Production Central Committee on Drilling and Production Practice. C. A. Young, of the Institute staff, Dallas, Texas, is secretary. Members are:

D. L. Caldwell, Barnsdall Oil Company, Los Angeles; W. E. Gilbert, Shell Oil Company, Los Angeles; E. F. Kindsvater, Phillips Petroleum Company, Bartlesville, Oklahoma; C. D. Miller, Barnsdall Oil Company, Tulsa; H. H. Power, University of Texas, Austin, Texas; and P. D. Torrey, The Sloan & Zook Company, Houston.

# DIED:

**MALCOLM DAY,** 43, oil field worker of Great Bend, Kansas, was instantly killed December 14, when the car he was driving struck a culvert near Russell, Kansas. His wife and two other occupants of the car were slightly injured.

**HOWARD A. NEATH,** district foreman of Humble Pipe Line Company at Pampa, Texas, died December 20, from burns received December 15 when his residence caught fire. He was a brother of J. A. Neath, vice president and general superintendent of Humble Pipe Line Company at Houston, and of E. R. Neath, scout for Humble Pipe Line Company at Longview, Texas. Howard A. Neath was born December 9, 1889.

**E. J. RILEY,** Tulsa, independent operator in the Illinois area, was killed in an automobile accident near Springfield, Missouri, December 20. Riley had been associated with oil interests for 16 years. When he came to Tulsa he joined Chestnut & Smith Corporation. He was at one time president of Smith Separator Company. With the opening of oil fields in Illinois he became active in that state and was returning to his home at the time of the accident.

**DR. JERRY C. FALVEY,** 52, East Texas producer and a resident of Longview, Texas, died December 19 in a New York hospital after a long illness. He operated in Arkansas and Louisiana as a side line to his medical practice, and abandoned the latter several years ago to devote his full time to the operation of his holdings in the East Texas field.

**WILLIS R. DEARING,** 51, drilling contractor and oil producer, died December 20 of a heart ailment in a Dallas hospital. He was a native of James, Hill County, Texas, and followed his father in drilling water wells on contract. Headquarters were established in Dallas in 1910, then in 1921 he began drilling oil and gas wells on contract. He entered the East Texas field as a producer during its early stage of development, resulting in the acquisition of substantial holdings. Survivors include his wife; two sons, Robert M. (Jack) and Herman A. Dearing; and C. B. Dearing, a brother, all of Dallas.

# THE WEEK'S NEWS SUMMARIZED

## January Demand

Demand for oil products in January will be the lowest since April, 1937, in the opinion of the United States Bureau of Mines, which last week estimated that 3,270,600 barrels daily would be sufficient to meet all consumption. This is 35,200 barrels, or 1 percent, less than the bureau's estimate for December, and 3 percent lower than the actual demand for domestic crude in January, 1938.

One important reason for the decline, the bureau explained, was that the figures provide for an increase in gasoline stocks of only 5½ million barrels, whereas 9,222,000 were added in January, 1938.

Gasoline demand in January is expected to be 3 percent over the actual in January, 1938, and exports are expected to be higher also.

## Proration

Louisiana has fixed its daily allowable for January at 251,340 barrels, which is an increase of 3760 barrels, and 9440 barrels in excess of the Bureau of Mines estimate for demand from that state.

Oklahoma will keep the same allowable it had during December.

Members of the Illinois-Indiana Petroleum Association were told last week that a bill had been written to set up a state oil commission to prorate oil production and would be submitted to the state legislature when it convenes in January.

Any changes made in Kansas proration methods will have the scrutiny of a committee of independent producers. Incoming Governor Ratner last week appointed a committee of 8, who were charged with the duty of formulating a definite program of suggestion, and as advisers to the state's Conservation Commission.

## Courts

Trial of the suit attacking Saturday and Sunday shutdowns in Texas is not likely to take place on January 10 as scheduled. This was indicated last week when the Railroad Commission abandoned its attempts to test wells owned in the East Texas field by United East and West Oil Company, filers of the case. The suit is extremely important as it alleges the commission's shutdown orders prorate wells below the marginal well allowance. It is possible at least two months will be required before it can be brought to trial.

## Prices

The oil industry's markets were under pressure last week, as reductions were made in wholesale prices of several refined products, while crude oil postings were slashed in Michigan.

Michigan oil prices were given their second consecutive weekly reduction. This time the cut amounted to 14 cents per barrel for all fields but one, and sent prices tumbling to a nine-year low. Simrall Corporation, who established the new schedules, declared town lot development at Bloomingdale was responsible.

Gasoline prices in Oklahoma-Kansas and Chicago territories were unsettled, and in some instances lower. Kerosene prices also were disturbed, being ⅛-cent lower. Fuel oil prices also were down.

## Statistics

Latest weekly statistics were featured by a substantial increase in crude runs to stills, which jumped 95,000 barrels to 3,245,000 barrels per day. As a result gasoline stocks rose nearly a million barrels during the week to 69,635,000 barrels, but were still 5 percent below a year ago. Crude oil production continued comparatively low, and crude inventories were drawn upon to the extent of 1½ million barrels, and now are at 17 year low. Gas and fuel oil stocks were down about 2 million barrels, but are still 23.9 percent greater than one year ago.

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# Demand Forecast

**Bureau of Mines estimates U. S. January needs will be 35,200 barrels less daily than during December if gasoline stocks to be held in line**

## *Bureau estimates January demand at 3,270,600 barrels*

Anticipating that January demand for new crude would be the lowest for any month since April, 1937, the Bureau of Mines on December 20 forecast a need for the coming month of but 3,270,600 barrels a day, 35,200 barrels, or 1 percent, less than the estimate for December and 3 percent lower than the actual demand for domestic crude in January, 1938.

The decline from a year ago, the bureau explained, "is due chiefly to the fact that provision is made for an increase of only 5,500,000 barrels in gasoline stocks, compared with an actual increase of 9,222,000 barrels in January, 1938.

"Higher runs than anticipated in the last quarter of 1938," the bureau said, "will result in larger refined inventories at the end of the year than expected, thus increasing the desirability of curtailing operations in the first quarter of 1939."

Daily average crude production and runs to stills during the 4 weeks from October 29 to December 3 were reported as 3,341,000 barrels and 3,209,000 barrels, respectively, while during that period total crude stocks (including heavy crude in California) declined 5,144,000 barrels, with foreign crude stocks increasing 132,000 barrels, making the decline in domestic stocks 5,276,000 barrels.

The daily average of this figure (151,000 barrels), added to the production, gives 3,492,000 barrels as the apparent daily average crude demand; comparing with the bureau's estimate of 3,391,000 barrels daily for November.

"The apparent excess of 101,000 barrels daily in crude-oil demand," it was pointed out, "was due primarily to larger runs to stills than were estimated. which resulted in an increase of about 1,200,000 barrels in gasoline stocks in November, whereas the bureau had contemplated no increase during that period."

### Gasoline Demand Increased

Motor-fuel demand for January is placed by the bureau at 36,230,000 barrels, an increase of 3 percent over the actual for January, 1938. "Some economists," the report commented, "predict gains as high as 6 percent in gasoline demand for January, these being based largely on business recovery, particularly in the automobile trade. However, the October and November figures, the latest available, do not indicate such material gains."

Reflecting forecasts of exporters, the estimate for motor-fuel exports is placed at 3,400,000 barrels, 100,000 barrels higher than the December estimate.

Explaining its estimate that runs to stills of 3,048,100 barrels daily will, with the contemplated yields and demands for gasoline and distillate, result in the increase of 5,500,000 barrels in finished gasoline stocks provided for in the forecast, the bureau pointed out that stocks of finished and unfinished gasoline on October 31 totaled 69,277,000 barrels and, according to the American Petroleum Institute, increased about 1,200,000 barrels during November, bringing them to approximately 70,450,000 barrels at the close of that month, or slightly lower than on the same date in 1937.

Benzol and direct sales and losses of natural gasoline are estimated at 1,000,000 barrels, making refinery production 44,130,000 barrels, which the bureau distributes among the various districts as follows: East Coast, 5,740,000 barrels; Appalachian, 1,480,000 barrels; Indiana-Illinois, 7,810,000 barrels; Oklahoma, 2,920,000 barrels; Kansas-Missouri, 2,420,000 barrels; Texas Inland, 3,060,000 barrels; Texas Gulf Coast, 11,070,000 barrels; Louisiana Gulf Coast, 1,340,000 barrels; North Louisiana-Arkansas, 850,000 barrels; Rocky Mountain, 1,140,000 barrels; California, 6,300,000 barrels.

Natural-gasoline consumption at refineries for the coming month is placed at 7 percent of the total production, or 3,090,000 barrels; the yield of straight-run and cracked gasoline is estimated at 43.4 percent, and the application of this yield to the straight-run and cracked production of 41,040,000 barrels gives crude runs of 94,490,000 barrels, or 3,048,000 barrels daily. Foreign crude runs are estimated at 2,200,000 barrels.

The estimate for exports has been raised 300,000 barrels over the December estimate to 5,800,000 barrels, but the estimate for crude used as fuel and for losses remains the same as for the current month, at 3,300,000 barrels.

## Estimated Daily Average Crude-Oil Demand by States

**(Barrels)**

**(As no changes in crude-oil stocks are involved in these estimates, they represent demand rather than production)**

| STATE | Forecast January, 1939 | Forecast December, 1938 | Actual Demand January, 1938 |
|---|---|---|---|
| Texas | 1,332,900 | 1,343,900 | 1,319,000 |
| California | 588,400 | 589,700 | 697,000 |
| Oklahoma | 499,700 | 500,700 | 540,000 |
| Louisiana | 241,900 | 248,000 | 239,000 |
| Kansas | 153,900 | 159,000 | 170,000 |
| New Mexico | 95,800 | 100,300 | 112,000 |
| Illinois | 86,100 | 71,900 | 41,000 |
| Wyoming | 66,800 | 76,100 | 51,000 |
| Arkansas | 49,000 | 51,600 | 43,000 |
| Michigan | 47,400 | 51,000 | 50,000 |
| Pennsylvania | 42,300 | 43,700 | 54,000 |
| Kentucky | 17,100 | 18,400 | 13,000 |
| New York | 12,100 | 12,800 | 15,000 |
| Montana | 11,900 | 12,600 | 11,000 |
| West Virginia | 9,400 | 10,000 | 7,000 |
| Ohio | 9,100 | 9,300 | 7,000 |
| Colorado | 3,900 | 3,900 | 4,000 |
| Indiana | 2,900 | 2,900 | 2,000 |
| | 3,270,600 | 3,305,800 | 3,375,000 |

## *Texas shutdown suit postponement likely again*

Trial of the suit attacking the Saturday and Sunday shutdown orders of the Texas Railroad Commission is unlikely to take place on January 10 as scheduled. This result seems certain as the Railroad Commission last week abandoned its attempts to test wells owned by United East and West Oil Company in the East Texas oil field.

The company had alleged that the commission was seeking to prorate marginal wells, and by an agreement approved by the court, the suit was postponed for 30 days from December 10, in order that time for the tests might be had.

Details of results were not available, but Railroad Commission Chairman Ernest Thompson said the commission planned to go ahead and test the wells regardless of the fact that Ray Starnes' company had withdrawn its request that they be made.

No other operator has chosen to file suit, and because of the difficulties resulting from the tests proposed, it appeared unlikely that any other test of these orders would take place in the near future or at least until the Starnes suit was settled.

The developments outlined above indicate that at least two months would be required to test wells and complete the gathering of evidence before the case would go to trial.

## *Lon Smith to head Texas commission*

Texas Railroad Commissioner Lon A. Smith was handed an order last week by Commissioner Ernest O. Thompson which will make Smith chairman of the commission on January 2. Thompson signed the order naming Smith chairman and it will become valid with the signature of either Smith or Sadler.

# Proration Picture

**Illinois proration measure to be submitted to legislature . . . Louisiana raises allowable . . . Kansas proration advisors are appointed**

## *Illinois conservation bill has been written*

Members of the Illinois-Indiana Petroleum Association, holding their annual dinner meeting at Robinson, Illinois, December 19, were told that a bill which would set up a state oil commission to prorate oil production when it deemed proration necessary has been prepared for the association by Professor Summers of the College of Law, University of Illinois, for introduction in the legislature when it convenes next month.

The announcement was made by William Bell, retiring president of the association, who maintained that Illinois operators were "already operating under the worst form of proration—that by the buyers."

Pipe line companies, Bell said, were fixing allowables which varied in different fields so that some operators were able to market all of their oil and others could sell only a small part of what they produced. Under the proposed legislation, a state commission would end such discrimination by fixing a uniform allowable for all wells. Another evil that Bell said would be corrected under the bill would be promiscuous drilling, putting a stop to drilling on church and school lots, in cemeteries, on roadways and on railroad right-of-ways.

The Illinois-Indiana association, in its campaign for state proration legislation, will lock horns with the Illinois Independent Oil Producers & Royalty Owners Association, which a week ago launched a fight against regulatory measures.

A. U. McCandless, Robinson, Illinois, was named president of the Illinois-Indiana Petroleum Association when the organization held its annual meeting in Robinson last week. He succeeds William Bell, Robinson.

Other officers named were C. C. Carroll, Marshall, Illinois, and A. F. Lager, Terre Haute, Indiana, vice presidents; T. B. Steele, Robinson, treasurer; Robert McIlvain, Olney, Illinois, secretary, and C. F. Buchner, St. Louis, and Frederick Grumme, Indianapolis, members of the executive board.

## *Kansas governor appoints oil men as proration advisers*

Any changes that come to proration methods in Kansas after Payne H. Ratner, Republican, becomes governor in January, will have the scrutiny of a committee of independent producers. Selection of the committee was the result of a conference between the incoming governor and men of the petroleum industry in Parsons, Kansas, December 20.

Chairman of this committee is Rolla Clymer, editor of the El Dorado Times. Its members are E. B. Shawver, Ralph Pryor, Howard Gillespie, R. F. Pielsticker and Walter Larsh, all of Wichita; T. A. Helling, El Dorado; Guy Berry, Independence; and Charles Shaffer, Russell.

Duties of this committee as expressed by the next Kansas governor are:

"To formulate a definite program of suggestion as to how my administration can properly and soundly assist the oil industry."

### Suggestions Made

This committee will serve in an advisory capacity to the Kansas Corporation Commission. Ratner told the oil producers that the director selected for the oil conservation division would be named after consultation with this committee.

Some suggestions as to changes in proration methods came at the conference. Harry B. Garden of Hutchinson urged that the proration office be kept free of politics. A. S. Ritchie, McPherson, suggested that "A practical business man as a member of the corporation commission would be a big help."

W. G. Skelly, Tulsa, urged that the practice of creating special allowables in Kansas be discontinued. "Your proration laws," he said, "were administered in an admirable manner up to the time special allowables came in."

The incoming governor adopted the theme of the retiring governor as to oil production in Kansas in one of his statements:

"Our operators believe that Kansas has been discriminated against in this market condition. We feel with our potential production in excess of 3,500,000 barrels daily, that Kansas is entitled to a fairer share of the national markets."

It was this attitude of Governor Walter A. Huxman which led to his threats to withdraw from the Interstate Oil Compact Commission and his remarks to the effect that federal control would come to the industry unless Kansas gained a larger share of the national market.

The Parsons conference drew more than 50 executives of major oil concerns and independent producers.

## *Texas commission will check refinery products*

Gasoline plants and refineries are to be equipped with adequate tanks and other facilities for measuring crude and products under provisions of an order issued by the Texas Railroad Commission last week. Among other things, the order provided:

1. That refineries shall make available and use refineries for measuring all crude oil and products taken in and all finished products.

2. That all gasoline plants shall install and use adequate and accurate metering facilities to account for all disposals of residue gas.

3. That all gasoline plants shall provide and use tanks for measuring each finished product.

4. Any plant failing to send in a "certificate of compliance," on forms furnished by the commission, by February 1, 1939, shall not be allowed to operate. The certificate is adequate for 12 months.

5. In the official findings, although not in the enacting portion of the order, was this description of the sufficiency of the meters: "Meters should be provided for measuring separately the dry sweet natural gas, the dry sour natural gas and casinghead gas, and the refinery vapors taken into such plants."

6. The official findings also recited that in the absence of such equipment, the commission found it impossible to check accurately the operation of such refineries and natural gasoline plants.

## *Louisiana allowable for January slightly higher*

Louisiana's daily allowable for January was set at 251,340 barrels by the Louisiana Conservation Commission, an increase of 3760 barrels over December.

North Louisiana's allowable was cut 450 barrels to 63,450 barrels divided as follows: Cotton Valley, 6500 barrels, 1500 from Lower Marine and 5000 from Travis Peak, gas distillate wells in the Lower Marine being classed as gas wells; Lisbon, 7750; Shreveport, 1200; Rodessa, 20,000; all others 18,000.

South Louisiana fields were given a combined allowable of 187,890 barrels.

## *Oklahoma demand figure remains unchanged*

Demand for 428,000 barrels daily from Oklahoma fields for January was indicated by purchasers, who met December 21 with W. J. Armstrong, chief conservation officer of the Oklahoma Corporation Commission.

The figure is identical with the state's allowable for November and December.

## *Texas fixes January gas well allowables*

Production of gas for wells in the Rodessa field was fixed at 70,500,000 cubic feet daily for January, according to provisions of an order issued by the Texas Railroad Commission last week. The December allowance was 55,735,000 cubic feet.

The East Panhandle sweet gas allowable was fixed at 121,304,000 cubic feet as compared with 113,659,000 feet for December. In the West Panhandle field the sour gas allowance was fixed at 644,796,000 cubic feet, approximately the same as the December allowance of 645,899,000 cubic feet. The sweet gas allowance for the West field, under the new order, was fixed at 543,543,000 cubic feet.

# Interstate Compact

## Thompson answers critics by asserting compact lack of dictatorial power is its strength and that it has helped improve industry's position

In answering critics of the Interstate Oil Compact Commission, who have charged that it is of little value because it lacks dictatorial powers, Commission Chairman Ernest O. Thompson last week declared that the compact was a clearing house and that the regulators of the industry are officials of the various states, and that in its very setup lies the power of the compact. Thompson then outlined the advancements made under the Interstate Compact Commission, and asserted much of the credit for the excellent balance of the industry's statistics was due to the group.

Thompson's discussion of the workings of the Interstate Oil Compact Commission follows in full:

"Through regulatory authorities of the several states and through the Interstate Oil Compact Commission, the oil industry in the past few weeks has achieved a balance of statistics, placing it in a strategically excellent position for the new year.

"By consolidating the gains already made, by pushing on with the slow but well-grounded progress, we hope during the coming months to achieve an equally important balance: The balance of understanding the basic aims of state and interstate regulation.

"Most often leveled at the Interstate Compact Commission is the criticism that it has and exercises no dictatorial or arbitrary powers. Understanding why this criticism would be made by those not fully aware of the aims and purposes of the commission, we insist that its very strength lies in this quality. We insist, moreover, that the yardstick by which the stature of the compact should be measured is its achievements. We count among its achievements the present position of the oil industry, contrasted on any basis with comparable industries of the United States.

"The Oil Compact Commission is a clearing house. Regulators of the industry are state officials. Their primary aim, in theory and in fact, is to conserve the natural resources of their respective states, make those resources mean as much as possible to the ultimate prosperity of those states.

"At times the interests of the states, as do the interests of individual men, may seem to conflict. For that reason the Compact has been based upon the one foundation concerning which there can be no conflict of interests, the prevention of the irreparable waste of a natural resource.

"Officials may differ over the temporary expedient to apply in oil regulation; and they may differ over the temporary objective. They cannot, however, and do not, differ upon the soundness of preventing unwise use of those natural energies by which oil is produced.

"We do not contend that the signatories to the compact, as individual regulatory officials in their respective states, have reached the ultimate in preventing wasteful practices. Practices followed for generations cannot be changed overnight. There must be understanding. That is why the "balance of understanding" stands now as a prime objective.

"Prevention of physical waste is no abstract principle. Waste prevention is real and concrete. It is accepted by the leaders in the industry.

"At the December meeting of the Texas Railroad Commission, men presumed to be, by their position, the wisest in the entire industry were placed on the witness stand. Pointedly we asked each of them:

"' Do you consider preserving bottom-hole pressures a sound practice?

"'Do you believe in producing with the most efficient gas/oil ratios?' and other questions of like import.

"Invariably the answer was an emphatic affirmative. The questions were not idly asked; the answers not lightly given.

"These questions and answers marked progress toward our immediate objective: Achieving the same balance in understanding that we have achieved statistically.

"Some there are who are impatient. They would take short cuts. We believe the soundest law and regulation is that which is accepted by those regulated, and acceptance can come only through understanding. Acceptance may be slow.

"Here is a specific example:

"To those who have not followed regulation closely it may have seemed an innovation, perhaps even startling, when Texas promulgated a three-months' proration order effective January 1. As a matter of fact, apparent to all when they examine the record, this order has been in the making for many months. It is an evolution, a logical development.

### Many Advancements

"In the old days the practice was to close dawn when there was a plethora of oil. When oil was needed it was produced wildly, rapidly. When there was too much the companies quit. It was a chaotic condition, hard on operators, workers, and the public who paid in high priced gasoline for wasteful practices.

"Ratable production was substituted. The evolution of ratable production has been slow. We have learned as we regulated. Early we learned that to produce in excess of demand was wasteful. So we started studying demand. We asked purchasers how much oil they needed for the coming month, tried to hold production to that figure. The system of nominating needs became firmly entrenched in the overall system of conservation. To check and double check, and because oil production was expanding rapidly, we asked for market demand figures from Washington.

"But a monthly forecast, while helpful, proved inadequate. Behind the month-by-month production stood the nation's oil storage as an unknown but vital factor. Aboveground storage is, after a manner, a relic. It was used by producers as an insurance against the time when oil would not readily be available from current production. Each company wrote its own insurance without coordination. Nobody knew what the storage situation was although everybody could guess. More than two years ago, therefore, the Compact Commission set out to get the facts about storage. Congress was asked to sanction by appropriation a survey of storage. This survey has been made. It has proved exceedingly helpful.

"Meanwhile we moved in other directions. The objective was still smoother operation. We asked purchasing companies to project their needs over a six-months' period. Nominations forms were changed. For the next succeeding month, purchasers reported firm nominations, the amount of oil the need for which was actually in sight; and anticipated needs for another five months. For considerably more than a year, these figures have been available for study and analysis. We were educating toward the goal of looking further ahead than our noses. In December of 1938, we put into practice this theory. Those who are regulated were ready to try the longer-range policy. Nobody was shocked by the idea of a three-months' forecast of production. They accepted it as sound. And it is sound. It places production on the same quarter-annual basis that is used as a basis for economic operation.

"This has been discussed in some detail because I consider it a fundamental example of what we are doing in the Compact Commission. In a state which has never had oil and its attendant problems, immediate acceptance of the objectives of conservation cannot and should not be expected. Those who regulate and those who are regulated, must first appreciate the fundamentals of conservation. That appreciation cannot be gleaned by reading books and papers. The soundest regulation must be based upon conviction, and conviction comes only through trial-and-error.

### Conservation Objectives

"If the potentialities of conservation were clearly understood the practices of conservation would be universally adopted. The Compact Commission aims toward achieving that understanding. We do not aim to achieve it immediately, but in 1939 our objective will be to better it.

"Here is the way in which I immediately see the objectives of conservation:

"First, establishing an efficient rate of flow for each and every field; that

rate of flow at which the largest amount of oil will be naturally produced.

"The other points are subsidiary and in relation to the first:

"Second. Take bottom-hole pressures regularly in all fields, and limit flow as indicated by those readings to obtain the optimum production.

Third. Don't drill more wells than are necessary to recover that optimum production.

"Fourth. Use market demand in conjunction with—and only in conjunction with—the prevention of physical waste.

"Apparent in these aims is the importance of sound engineering practices. In fact, proration must be based upon those practices. Moreover, regulation is and will be accepted by the general public only when based upon waste prevention, which in turn is based upon engineering.

"Perfection must always remain only a goal in human endeavor and the regulatory authorities who meet and discuss their problems under the compact are human. Measured by achievement, it is a vital body through which eventually will be realized the goal of scientifically balanced production purpose to realize the maximum use and benefit of a natural product which product is of first importance in the economy of the nation and the world."

## *Foreign buyer takes K-M-A oil sample*

The purchase of 150,000 barrels of high-gravity oil from the K-M-A deep field has been arranged by the Hope Engineering Company to be moved to Houston on consignment to a foreign market, according to B. E. Hepler, president. The company has been negotiating with K-M-A operators and prospective foreign buyers for some months for the construction of an 8-inch trunk line to the Texas Coast. The above shipment is to enable a foreign refinery to make a test run on the oil.

K-M-A operators that participate in the 150,000-barrel delivery will be paid the posted price of $1.03 per barrel for 40-gravity and above. The oil will be handled on a common-carrier basis by The Texas Pipe Line Company, which has a 10-cent field gathering charge and 20 cents per barrel trunk line tariff.

## *Plan refinery at Evansville, Indiana*

Dewey Stinson, operator of the Troy Refining Company at Troy, Indiana, has acquired the lease on 38 acres of land owned by the Evansville Chamber of Commerce for construction of a refinery of not less than 2500-barrel daily capacity. Construction of the plant, which will be the first located in the Indiana city and will provide a new market for Southern Indiana and Western Kentucky production, is to start immediately.

The refinery site is on the Ohio River, where considerable crude is now being transported by barge to Louisville, Kentucky.

# Market Situation

**Michigan crude prices cut again . . . Refined markets unsettled . . . Runs to stills are up 95,000 barrels causing gasoline stock increase**

## *Markets are unsettled despite good outlook*

Although cheerfulness has been maintained in the oil industry, because of expected favorable results in the new year, the actual behavior of the markets lately has not been re-assuring.

Despite the present comparatively low levels of crude oil production for the country as a whole, too much oil is being produced in various states and districts, and the crude markets in those areas consequently are soft, with substantial quantities moving to market at less than posted prices.

### Michigan Crude Cut

An example of the disturbed crude markets last week was that in Central Michigan, where postings were reduced 14 cents a barrel, because of over-production in the Bloomingdale area.

In the Mid-Continent, substantial quantities of crude are said to be moving at less than posted prices in several districts.

Increased concern has arisen over the whole market situation in California, because of the continued heavy crude production. Special efforts were being made last week to bring the crude output down nearer to economic levels, but it remained to be seen what degree of success would be achieved. The operators seek to bring about a 50,000-barrel per day reduction of production.

### Markets for Products Unsettled

As disconcerting as the weaknesses in the crude oil markets are those in the refined oil markets. Prices of most of the principal products have been sagging lately, as offerings by refiners and re-sellers have not been readily absorbed.

Prevailing tank car prices of gasoline late last week were in numerous instances ⅛-cent a gallon lower than a week previously, for the various grades, and in most districts.

This weakening of gasoline prices may have resulted in part from recent stepping up of refinery runs and an accompanying running of substantial volumes of gasoline to storage. In the week ended December 17 crude runs to refinery stills were up 95,000 barrels daily, and gasoline stocks were increased about a million barrels.

Kerosene tank car prices last week were down ⅛-cent a gallon in some instances, having displayed weakness for the first time in an extended period.

The markets for light fuel oils also have encountered some buyer resistance, and wholesale prices last week were lower in some instances. Consumption of these oils is now seasonally heavy, but inventories are unusually large and they apparently are not being reduced rapidly enough to keep the markets entirely stable.

The heavier fuel oils have come into better demand lately, and there is some talk of the possibility of higher prices soon, but so far the prices have remained mostly unchanged.

## *Oil industry prices generally unsettled*

Prices in the oil industry in the past week were generally under pressure, and reductions were made in wholesale prices of several refined products, while the crude market was featured by price cuts in Michigan.

Minimum quotations were maintained on natural gasoline, but the range between bottom and top prices was narrowed.

Refined gasoline prices at Oklahoma-Kansas refineries and in the Chicago marketing territory were generally unsettled and in numerous instances lower. In most districts and for practically all grades, the top tank car prices were down an eighth-cent a gallon.

Kerosene tank car prices also were disturbed, and offerings were common at ⅛-cent a gallon less than in the previous week.

Light fuel oil prices similarly were lower in some instances, as concessions were made by sellers.

### Michigan Crude Prices Cut

Simrall Corporation, affiliate of Standard Oil Company of Ohio, on December 19 announced a reduction of 14 cents in prices paid for all Central Michigan crudes except from West Branch and Arenac fields.

The new Michigan prices are as follows: Crystal, Greendale, Porter, and equal grades, 78½ cents a barrel; Beaverton, Buckeye, Bentley, and Edenville, 76 cents; Freeman, 68 cents. West Branch and Arenac crudes were left unchanged at 70 cents a barrel.

The Simrall company explained that the reduction was due to the town lot development at Bloomingdale, in Van Buren County, which was said to be intruding on outlets for oil in the central portion of the state.

It is reported that 10,000 to 12,000 barrels of oil are moving out of the Bloomingdale area daily by tank car and truck, at prices of 50 to 73 cents a barrel.

Although the Bloomingdale oil is

relatively high in sulphur content, it compares favorably with the crudes from other Michigan fields.

### Natural Gasoline

Natural gasoline, grade 26-70, was priced generally in the Mid-Continent markets f.o.b. refineries at 3¾ cents a gallon, and sales were reported at 3½ cents f.o.b. Breckenridge, Texas.

### Gasoline Prices

U. S. motor gasoline ranged in the Oklahoma market last week about as follows: 62 octane and below, 3⅛ to 4¼ cents a gallon; 63 to 66 octane, 3⅞ to 4½ cents; 67 to 69 octane, 4⅛ to 4⅝ cents; 70 to 72 octane, 4⅛ to 5 cents.

Corresponding prices in the Chicago market were 3⅜ to 4 cents, 3⅝ to 4½ cents, 3¾ to 4⅝ cents and 4 to 4¾ cents.

In East Texas the most common gasoline, 60-62, 400 end point, was priced generally at 4 cents a gallon.

Kerosene prices f.o.b. Oklahoma refineries ranged from 3⅞ to 4¼ cents a gallon for the 41-43 water white grade, and from 4⅛ to 4⅝ cents for the 42-44 water white grade; and corresponding prices in the Chicago market were 3¾ to 4⅛ cents and 3¾ to 4⅜ cents.

### Fuel Oil Quotations

Fuel oil prices were lower last week in some instances. In the Chicago market range oil was priced from 3⅝ to 4 cents a gallon. The No. 1 white oil was priced from 3⅝ to 3⅞ cents, and No. 1 straw from 3½ to 3¾ cents. No. 2 straw was 3⅜ to 3⅝ cents. No. 3 oil was 3¼ to 3⅜ cents. No. 5 oils were 60 to 70 cents a barrel. The No. 6 oil was quoted at 30 to 45 cents.

## *Latest statistics show increased refinery runs*

The latest weekly statistics of the oil industry were featured by a substantial increase in crude runs to refinery stills. Crude oil production has continued comparatively low. Gasoline stocks have been increased, but fuel oil inventories have been further reduced.

United States crude oil production averaged 3,276,300 barrels daily in the week ended December 17, having increased about 30,000 barrels from the previous week's rate. The output then was 4.7 percent larger than a year before.

Crude runs to stills jumped 95,000 barrels in the week ended December 17 to 3,245,000 barrels daily. That was 8/10 of 1 percent more than the throughput in the corresponding week last year.

Gasoline stocks rose approximately a million barrels, or to 69,635,000 barrels in the week of December 17. They were still 5 percent under the comparable level last year, but the stocks of a year ago were excessive.

Gas and fuel oil inventories came down about 2,000,000 barrels in the week ended December 17, dropping to 148,573,000 barrels. That amount was 23.9 percent larger than the supply on hand at the corresponding time last year. But the demand is better now than a year ago.

Crude oil stocks were reduced 1,556,000 barrels in the week ended December 10, to a new 17-year low of 269,509,000 barrels. At that level, they were 11.1 percent lower than at the corresponding time last year. The stocks of domestic oil dropped 1,852,000 barrels for the week, while foreign crude in storage increased 296,000 barrels.

## *Michigan crude prices to nine-year low*

Michigan oil operators face the gravest situation for survival since 1931 as the crude oil price market broke for the second successive Monday, and this time to a new 9-year low.

Simrall Corporation, affiliate of Standard Oil Company of Ohio, and buyer of around 65 percent of all Michigan crude oil, posted a straight 14-cent per barrel cut for all districts in which it operates but one. Pure Oil Company and McClanahan-Leonard Pipe Line Company followed suit, but Bay Refining Company, an independent, buying about 60 to 70 thousand barrels monthly, chiefly from affiliated producer connections in the Buckeye field, did not immediately meet the cut.

The new postings, which went into effect Monday, December 19, hit hard-

## Trends of United States Production and Stocks

**Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports**

| WEEK ENDED | Crude Oil Production (Barrels Daily) | Crude Runs to Stills (Barrels Daily) | Crude Oil Stocks (Barrels) | Gasoline Stocks (Barrels) | Gas & Fuel Oil Stocks (Barrels) |
|---|---|---|---|---|---|
| September 25, 1937 | 3,666,300 | *3,455,000 | 307,974,000 | 65,620,000 | 116,472,000 |
| November 27 | 3,425,800 | 3,325,000 | 304,156,000 | 68,544,000 | 121,616,000 |
| December 25 | 3,492,600 | 3,245,000 | 303,294,000 | 74,437,000 | 118,659,000 |
| January 1, 1938 | 3,436,600 | 3,320,000 | 303,468,000 | 77,291,000 | 118,660,000 |
| January 29 | 3,357,650 | 3,170,000 | 304,286,000 | 84,844,000 | 118,793,000 |
| February 26 | 3,322,800 | 3,170,000 | 305,167,000 | 90,719,000 | 120,958,000 |
| March 19 | 3,322,550 | 3,080,000 | 306,380,000 | *93,192,000 | 122,067,000 |
| March 26 | 3,405,600 | 3,080,000 | 307,557,000 | 92,858,000 | 122,979,000 |
| April 30 | 3,396,150 | 3,215,000 | 307,147,000 | 91,339,000 | 128,270,000 |
| May 28 | 3,098,650 | 3,150,000 | 301,583,000 | 87,946,000 | 134,315,000 |
| June 25 | 3,083,900 | 3,025,000 | 293,463,000 | 82,412,000 | 137,801,000 |
| July 30 | 3,316,400 | 3,240,000 | 288,514,000 | 76,864,000 | 144,294,000 |
| August 27 | 3,388,500 | 3,255,000 | 285,029,000 | 71,754,000 | 146,926,000 |
| September 24 | 3,251,150 | 3,220,000 | 280,278,000 | 68,605,000 | 150,468,000 |
| October 1 | 3,231,800 | 3,235,000 | 280,852,000 | 68,602,000 | 151,759,000 |
| October 29 | 3,237,500 | 3,145,000 | 275,824,000 | 67,590,000 | 153,719,000 |
| November 12 | 3,243,250 | 3,180,000 | 273,394,000 | 67,551,000 | *154,666,000 |
| November 26 | 3,260,900 | 3,295,000 | 270,563,000 | 68,628,000 | 153,634,000 |
| December 3 | 3,223,650 | 3,175,000 | 271,065,000 | 69,155,000 | 151,617,000 |
| December 10 | 3,245,100 | 3,150,000 | †269,509,000 | 68,587,000 | 150,779,000 |
| December 17, 1938 | 3,276,300 | 3,245,000 | ..... | 69,635,000 | 148,573,000 |
| December 18, 1937 | 3,439,850 | 3,220,000 | ‡303,163,000 | 73,288,000 | 119,919,000 |
| Change in past year | —4.7% | +0.8% | —11.1% | —5.0% | +23.9% |

* All time peak. † Lowest for 17 years. ‡ Stocks December 11, 1937.

est in the new Clare County fields in Freeman and Redding Townships, where development costs are proportionately higher than in others. Prices posted for this field were 68 cents per barrel, a 14-cent cut Monday, and a 19-cent cut over a 12-day period.

Other postings, all representing 14-cent cuts were:

Porter grades—78½ cents.

Buckeye grades—76 cents.

*Sherman grades—78 cents.

West Branch-Arenac grades—70 cents.

* Simrall is not a purchaser in Sherman field, this price posted by Pure.

Simrall did not post for Southwestern Michigan fields as it is not a buyer in that area. Postings in this district range from 55 cents up to 72 cents.

C. L. Maguire, president of Simrall Corporation, said the cut was primarily to adjust Central Michigan grade prices with prices in Southwestern Michigan, which he said were actually around 60 cents, although posted at 72 cents. To maintain markets for Central Michigan fields, Maguire said, the 14-cent cut was necessary to compete with cheap oil in the shallow fields in Allegan and Van Buren counties.

Illinois likewise has been repeatedly blamed for Michigan's 4-month down trend in prices, which were at $1.24½ at mid-year. The Toledo area is the chief buyer of Michigan's out-state crude oil and this area likewise is one of the best outlets for Illinois oil.

The lowest price of record paid for Michigan oil was in 1931 when the postings went to 35 cents.

# Crude Production

## United States output gains 148,575 barrels daily to 3,422,425 barrels; goes above bureau figure

REFLECTING the lifting of one Saturday shut-down in all Texas fields, United States crude production showed a marked increase over the previous week, and averaged 3,422,425 barrels a day. At this level the daily output was 148,575 barrels more than during the previous week and stood 116,625 barrels above the Bureau of Mines estimated market demand for domestic crude in December.

Although some of the major producing states showed a considerable decline in production during the past week, the increased output of Texas brought the total production considerably above the previous week's level.

Texas production was up 164,800 barrels to 1,437,700 barrels, which was 93,800 barrels more than the Bureau of Mines recommendation and 143,123 barrels greater than the state proration program.

California's flow decreased to 659,300 barrels daily, or 10,300 barrels lower than in the previous week. However, the output exceeded the federal allocation by 69,600 barrels and the recommendation of the Central Committee of California Oil Producers by 44,300 barrels a day.

Oklahoma showed a decrease of 18,525 barrels a day, averaging 423,850 barrels a day. That was 76,850 barrels less than the estimated demand and 4150 barrels less than the state allowable.

Louisiana production was up 4325 barrels, the daily output being 258,225 barrels a day or 10,225 barrels more than the Bureau of Mines recommendation and 10,345 barrels more than the allowable prescribed by the state.

Kansas showed an increase of 3475 barrels in producing 157,000 barrels daily, which was 2000 barrels less than the estimated demand and 6400 barrels less than the state allowable.

### *British American is to expand*

Crude oil producing interests of British American Oil Company, Ltd., will be extended as the result of sale last week of 150,000 treasury shares of the company's stock to Robert Benson & Company, London, at $20 a share.

## United States Crude Oil Production

### Estimates Compiled by The OIL WEEKLY

| DISTRICT OR STATE | Bureau of Mines Recommendation (Daily in Dec.) | State Allowable in Dec. | BARRELS DAILY FOR WEEK ENDED Dec. 24 | Dec. 17 |
|---|---|---|---|---|
| TEXAS— | | | | |
| Texas Panhandle | | | 69,200 | 65,400 |
| North Texas | | | 85,900 | 74,200 |
| West Central Texas | | | 36,100 | 30,600 |
| West Texas | | | 227,800 | 201,800 |
| East Central Texas | | | 103,500 | 89,800 |
| East Texas Field | | | 423,600 | 372,100 |
| South Texas | | | 255,800 | 226,200 |
| Texas Gulf Coast | | | 236,800 | 212,800 |
| Total Texas | 1,343,900 | 1,294,577† | 1,437,700 | 1,272,900 |
| CALIFORNIA— | | | | |
| Long Beach | | | 53,400 | 53,800 |
| Santa Fe Springs | | | 30,200 | 30,500 |
| Huntington Beach | | | 32,300 | 31,500 |
| Dominguez | | | 21,800 | 25,700 |
| Ventura Avenue | | | 33,800 | 33,500 |
| Midway-Sunset | | | 61,800 | 52,000 |
| Kettleman Hills | | | 61,000 | 62,400 |
| Wilmington | | | 94,500 | 97,000 |
| Others | | | 270,500 | 283,200 |
| Total California | 589,700 | 615,000* | 659,300 | 669,600 |
| OKLAHOMA— | | | | |
| Oklahoma City | | | 94,125 | 106,500 |
| Seminole Area | | | 91,150 | 90,325 |
| Fitts | | | 36,425 | 35,425 |
| Others | | | 202,150 | 210,125 |
| Total Oklahoma | 500,700 | 428,000 | 423,850 | 442,375 |
| LOUISIANA— | | | | |
| North Louisiana | | | 69,625 | 69,700 |
| South Louisiana | | | 188,600 | 184,200 |
| Total Louisiana | 248,000 | 247,880 | 258,225 | 253,900 |

| DISTRICT OR STATE | Bureau of Mines Recommendation (Daily in Dec.) | State Allowable in Dec. | BARRELS DAILY FOR WEEK ENDED Dec. 24 | Dec. 17 |
|---|---|---|---|---|
| KANSAS— | | | | |
| Burrton-Haven | | | 8,450 | 8,875 |
| Russell County | | | 22,725 | 21,925 |
| Silica | | | 12,050 | 10,075 |
| Others | | | 113,775 | 112,650 |
| Total Kansas | 159,000 | 163,400 | 157,000 | 153,525 |
| NEW MEXICO | 100,300 | 98,285 | 98,400 | 99,200 |
| MICHIGAN | 51,000 | | 50,300 | 51,600 |
| ARKANSAS | 51,600 | | 49,950 | 50,650 |
| MOUNTAIN STATES— | | | | |
| Wyoming | 76,100 | | 55,100 | 55,800 |
| Montana | 12,600 | | 12,850 | 13,100 |
| Colorado | 3,900 | | 3,850 | 3,700 |
| Total Mountain States | 92,600 | | 71,800 | 72,600 |
| EASTERN STATES— | | | | |
| Pennsylvania Grade | | | 70,400 | 69,500 |
| Southern Illinois (New Pools) | | | 109,600 | 102,800 |
| Illinois-Indiana (Old Pools) | | | 13,100 | 12,700 |
| Others, Eastern | | | 22,800 | 22,500 |
| Total Eastern States | 169,000 | | 215,900 | 207,500 |
| Total United States | 3,305,800 | | 3,422,425 | 3,273,850 |

† Shut-down for Saturday, December 17, lifted; allowable figure provides for Saturday and Sunday shut-downs.

* Recommendation of Central Committee of California Oil Producers.

# WEEK'S DRILLING HIGHLIGHTS

## California

A second "60,000-barrel" producer was completed last week at Coalinga Nose in Fresno County. The well, like the other, has not been given an open-flow test to determine potential, but it has the same thick sand section that was responsible for the original report.

## Illinois

The present widespread development in the Coal Basin started when a test headed for the Devonian found oil in upper strata. Now a well has gone on through to the original objective. Heading 45 barrels in 45 minutes, it probably inaugurates a deep development program and the possibilities of the region as an oil source must be considered from aother angle.

## Indiana

Gibson County has a wildcat completion that flows more than 100 barrels per hour from the McClosky, making it the outstanding well of the week, the biggest well in Indiana and one of the best in the current development of the Illinois Basin.

## Oklahoma

A drilling-depth record for Oklahoma may come out of Washita County wildcat of Continental Oil Company, where 10,195 feet of 9-inch casing is to be set. The well is still in Pennsylvania rocks and in an area long looked upon favorably for deep production in the basin. Field development in Oklahoma is largely restricted to older area, chiefly Greater Seminole.

## Kansas

The list of drilling wells in Kansas continued to shorten last week. Despite the tendency to drill fewer wells, however, the week established one Barton County wildcat as a pool opener. Showings in four other tests indicated either new pools or extensions to older fields.

## Southwest Texas

Except for one well in California, depth record was set up in the Agua Dulce field with hole below 13,431 feet and that after penetrating a record thickness of heaving shale. An important extension of production at Alice is indicated. In McMullen County, the Rhode area was extended by a large gas well. Kelsey field is indicated to be principally on the Brooks County side and probably is important in area.

## Texas Gulf Coast

New sand found in test at League City, while another well was extending production there a half-mile west. The Harris County wildcat at Mount Houston that has been threatening to make an oil well finally was abandoned. It is believed, however, that the location is on the edge of production that will be developed by further drilling.

## Arkansas

Revival of interest in the Buckner-Schuler trend follows discovery of the fourth Permian field in Columbia County. The well on production test made 37 barrels per hour.

## North Texas

Cooke County has a new production from the Ellenberger in a well estimated good for 200 barrels daily. In Baylor County a wildcat that held interest because of information being withheld resulted in only a small show of oil. Another test will be drilled.

## West Texas

Try for a two-mile extension of the north portion of the Seminole pool in Gaines County is in doubt. Water intrusion forces reworking of wildcat in northeastern Garza County.

### Comparison of Permits Granted for New Wells

| STATE | Week Ending Dec. 24 | Total this Mo. | Total this Year | Total this Date Last Year | 1937 Year Total |
|---|---|---|---|---|---|
| Arkansas | 6 | 22 | 247 | 240 | 240 |
| California | 22 | 75 | 1,146 | 1,584 | 1,584 |
| Louisiana | 26 | 80 | 1,214 | 1,227 | 1,227 |
| Kansas | 15 | 85 | 1,453 | 2,663 | 2,663 |
| Michigan | 18 | 83 | 953 | 958 | 958 |
| Oklahoma | 51 | 152 | 1,978 | 2,711 | 2,711 |
| Texas | 219 | 772 | 12,369 | 17,238 | 17,238 |
| Total | 357 | 1,269 | 19,360 | 26,621 | 26,621 |

### Summary of Wells Completed in the United States

### Week Ending December 24, 1938

| | Completions | Oil Wells | Gas Wells | Failures | Initial Production | Total, 1938 | Total this Date, 1937 |
|---|---|---|---|---|---|---|---|
| Alabama | ..... | ..... | ..... | ..... | ..... | 2 | 2 |
| Arkansas | 1 | 1 | ..... | ..... | 892 | 230 | 146 |
| California | 27 | 19 | 1 | 7 | 8,893 | 1,260 | 1,449 |
| Colorado | 1 | ..... | ..... | 1 | ..... | 11 | 19 |
| Florida | ..... | ..... | ..... | ..... | ..... | ..... | 1 |
| Georgia | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Illinois | 120 | 105 | ..... | 15 | 23,259 | 2,044 | 407 |
| Indiana | ..... | ..... | ..... | ..... | ..... | 164 | 146 |
| Kansas | 23 | 20 | ..... | 3 | 18,767 | 1,646 | 2,657 |
| Kentucky | 19 | 8 | 4 | 7 | 515 | 809 | 575 |
| Louisiana | 20 | 11 | ..... | 9 | 4,319 | 1,075 | 985 |
| Michigan | 24 | 13 | 1 | 10 | 6,220 | 1,000 | 928 |
| Mississippi | ..... | ..... | ..... | ..... | ..... | 20 | 15 |
| Montana | 2 | 2 | ..... | ..... | 115 | 77 | 198 |
| Nebraska | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| New Mexico | 17 | 16 | ..... | 1 | 4,625 | 545 | 675 |
| New York | *6 | 6 | ..... | ..... | 64 | *649 | *1,327 |
| North Dakota | ..... | ..... | ..... | ..... | ..... | 1 | ..... |
| Ohio | 16 | 3 | 11 | 2 | 82 | 933 | 1,486 |
| Oklahoma | 43 | 23 | 4 | 16 | 6,483 | 2,091 | 2,919 |
| Pennsylvania | *24 | 21 | 2 | 1 | 25 | *1,963 | *2,939 |
| Tennessee | ..... | ..... | ..... | ..... | ..... | 2 | ..... |
| Texas | 207 | 143 | 4 | 60 | 181,780 | 12,208 | 15,008 |
| Utah | ..... | ..... | ..... | ..... | ..... | 4 | 1 |
| West Virginia | 11 | 1 | 9 | 1 | 250 | 691 | 970 |
| Wyoming | ..... | ..... | ..... | ..... | ..... | 106 | 109 |
| Total this week | 561 | 392 | 36 | 133 | 256,289 | 27,533 | 32,962 |
| Total last week | 518 | 371 | 45 | 102 | 308,844 | ..... | ..... |
| Total this year | 27,533 | 19,087 | 1,987 | 6,459 | 16,953,698 | ..... | ..... |

* Includes water-intake and pressure wells.

# Oklahoma Fields

***Secondary development in Seminole area is increasing. Washita County wildcat sets record string of nine-inch.***

**Tulsa.**—Determination of Oklahoma oil producers to rework its older producing areas was further proven last week when the number of wells started jumped to 51. A check of this list of locations shows the Greater Seminole area in the lead. In particular the St. Louis pool of Pottawatomie County is drawing locations warranted by the slight extensions that have expanded it during the year. Pottawatomie County had 10 wells started and Seminole County had 8.

Seven of the wells started were in the shallow Coal gas field, Pittsburg County.

The trend into the older fields was in sharp contrast by reason of the absence of wildcat ventures or efforts to extend production around the several wells which have drawn the classification of pool openers.

The fact that 9-inch casing is to be set at 10,195 feet in the Washita County wildcat of Continental Oil Company, Procter 1, C NW 28-10n-20w, was accepted as evidence that the western part of the state is due for a deep test. At this depth the well is thought to be in Pennsylvanian rocks, a condition which leaves it shallow as to geology but deep in feet.

Oil in the hole of a Cleveland County wildcat, Taylor 1, SE SW 1-7n-2w, where Gulf Oil Corporation is drilling a mile north of the Burgher discovery, was given scant consideration because the oil is thought to be from the Chicken Farm sand, which has low standing as an oil source.

Early in January the new Hillsdale field, Garfield County, should have a test on its second well.

### Set Long Nine-Inch String

An indication that western Oklahoma will get one of the deep tests long awaited came last week with the decision of Continental Oil Company to set 10,195 feet of 9-inch casing in Proctor 1, C NW 28-10n-20w, Washita County wildcat. Hole is now being reamed. It will be the longest casing string ever attempted in Oklahoma.

Scant geological information has been made public on this test. It is the opinion of geologists, however, that bottom of the hole is still in beds of Pennsylvanian age. At its present depth it is the sixth well ever to drill below 10,000 feet in Oklahoma. Size of the hole is sufficient to justify the conclusion that drilling will be carried beyond the present Oklahoma depth record, 11,415 feet. This depth was set by Gulf Oil Corporation in a Grady County test, finished as a dry hole in April, 1938.

The Proctor test is on a block of 31,000 acres. Nearest production is the small Gotebo pool in Kiowa County, 30 miles southeast.

Another western Oklahoma wildcat which has close observation is the community venture in the Chickasha gas field, Grady County. Drilling is under supervision of Carter Oil Company, Smith 1, C SE SW 25-5n-8w. Hole is being made below 6350 feet. Contract depth is 10,000 feet.

The only other wildcat now drilling in the western part of the state is the recent start by Trigg, Carr and Gutowsky, Lunkard 1, NEc SE 34-17n-8w, Kingfisher County, which has reached only 1700 feet.

### Old Seminole Area Active

The old Seminole area continues to lead Oklahoma in drilling activity. Most active spot in this cluster of fields is St. Louis, Pottawatomie County, where 11 wells are drilling. Throughout the year this field has been a favorite for small extensions south and east.

Next in favor is the Grayson pool, Seminole County, which was extended a half-mile north two weeks ago by Superior Oil Corporation, whose Tiger 1, NW SE SE 12-6n-5e, was completed in the Simpson dolomite as a pumping well. Four other wells are now drilling to the north of old production.

Another Greater Seminole spot drawing increased activity is the West Little River pool, discovered in August, 1938, when Wilcox sand production was found by Smith Brothers Drilling Company (the well was started by Young & Newsome), in Edgeman 1, Sec 17-7n-6e, total depth 4340 feet. Three other wells have been completed and four are drilling.

Last week this field was assured 10-acre spacing by the Oklahoma Corporation Commission. Eight sections were included in the area covered by the order.

### Cleveland County

Although the Cleveland County wildcat of Gulf Oil Corporation, Taylor 1, SE SW 1-7n-2w, had 5800 feet of oil in the hole at the end of the week, it is not rated highly as a commercial producer. The oil is thought to be from the Chicken Farm sand, a member of the lower Pennsylvanian beds, and not a consistent source of oil in Oklahoma.

Oil rose in the hole after a series of perforations between 6880 and 6909 feet. Previously the hole had been carried to 7676 feet, where it had salt water. One plug-back failed to shut off water when casing was perforated. The second plug-back resulted in oil rising in the casing. Log of the hole is being studied and further tests will be made.

This well is a mile north of the single producing well, which marked the discovery of the Noble pool, Cleveland County. It was not until December that an offset was started for the Noble discovery well, which has been making water since completion. The offset being drilled by Burke-Greis Oil Company, Albert 1, SE SW NW 19-7n-1w, is drilling below 4000 feet.

Another Cleveland County wildcat, Taylor 1, of Harper-Turner et al, also Taylor 1, SE NW NW 28-8n-2w, is below 6300 feet.

The second well of the recent Hillsdale discovery, Garfield County, is due for testing within a week. It is Mackey

## OKLAHOMA
## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Coal—** | | |
| Continental Oil Co., Brown 2, sw nw sw 7-1n-8e | 2837 | 4648 |
| Franklin et al, Hudson 1, csl nec nw 26-1n-8e | * | 800 |
| Campbell, Watts 1, nec 24-3n-11e | ¶3.5 | 1363 |
| **Creek—** | | |
| Sinclair Prairie Oil Co. & Mid-Continent Petroleum Corp., Jobe Cole 3, sw sw nw nw 15-17n-7e (Pressure Well) | * | 2671 |
| **Garfield—** | | |
| Sinclair Prairie Oil Co., Belven 33, sw se sw ne 24-22n-4w | 10 | 3290 |
| **Hughes—** | | |
| Phillips Petroleum Co., Beeker 1, ne nw sw 8-5n-10e | 237 | 4832 |
| City of Holdenville, Fair Grounds 1, sec 13-7n-8e | * | 1200 |
| **Kay—** | | |
| Shaffer et al, McKee 1, nec nw 20-28n-1w | * | 2500 |
| Ohio Oil Co. & Helmerich & Payne, Wilbur 2, ne nw nw 21-28n-1w | 625 | 3647 |
| **Lincoln—** | | |
| Wilcox Oil & Gas Co., Saylor 4, swc nw 14-14n-6e | 110 | 2960 |
| Coralena Oil Co., Sac-Fox 1, nec se 16-14n-6e | 80 | 3060 |
| **Logan—** | | |
| Helmerich & Payne, Inc., Humphrey 1, nec sw 27-16n-1e | * | 5314 |
| **Muskogee—** | | |
| Parks, Hilderbrand 5, nw nwc se 17-14n-19e | * | 615 |
| McDaniels 4, 200 ft east c s½ se 17-14n-19e | * | 749 |
| Foltz, Rowsey 8, ne nw ne sw 9-15n-18e | 4 | 982 |
| **Noble—** | | |
| Phillips Petroleum Co., Robertson 1, nec sw 29-24n-1w | * | 4568 |
| **Okmulgee—** | | |
| Penrod, Barnett 2, ne sec 19-12n-14e | ¶0.75 | 2164 |
| Browning & Potter, Bradford 1A, sw sw se sw 10-13n-13e | 18 | 1807 |
| Wilson, Flint 2A, se nw ne ne 27-14n-14e | 2 | 1142 |
| **Osage—** | | |
| I. T. I. O. Co., 459, sec ne 25-25n-10e | ¶1.25 | 1908 |
| Norbla 3, se nw se ne 3-26n-11e | * | 1690 |
| **Pawnee—** | | |
| Johnson Refining Co., Scully 2, nw se nw ne 25-21n-7e | * | 2790 |
| **Pittsburg—** | | |
| Campbell, Casey 1, sec sw 18-3n-12e | * | 1300 |
| Johnson 1, nwc 30-3n-12e | * | 1447 |
| **Pontotoc—** | | |
| Caloma Oil Co., Brintz 1, se ne sw 4-1n-6e | * | 1707 |
| Phillips Petroleum Co., Norris 17, se sec sw 25-2n-6e | 13 | 2787 |
| Casey et al, Flemming 2, sec 12-5n-4e | 80 | 2625 |
| **Pottawatomie—** | | |
| Farmers Mutual Royalty Co., Waite 1, nec nw 9-5n-5e | 38 | 2875 |
| Atlantic Refining Co., Goss 1, nwc se 6-6n-4e | 248 | 4520 |
| Elbar Petroleum Corp., Hathcock 1A, sw se sw 11-7n-4e | 150 | 4141 |
| Smith, Hines 2, ne se ne 21-7n-4e | 1012 | 4089 |
| Phillips Petroleum Co., Curley 2, se sw nw 22-7n-4e | * | 3570 |
| Cooper, Green 2, sw se ne 35-7n-4e | 60 | 4181 |
| Hall & Briscoe, Smith 1, se ne ne 32-7n-5e | 330 | 4146 |
| Vierson, Rhodd 1, nec sw 32-7n-5e | 307 | 4055 |
| Alma Oil Co., Curley 2, se sw nw 33-7n-5e | 250 | 4185 |
| **Seminole—** | | |
| Hall, Troup & Moore, Deavers 1, nw ne se 27-6n-5e | * | 2880 |
| Magnolia Petroleum Co., Hall-Coker 2, se sw se 13-7n-6e | 28 | 3919 |
| Eagle Oil Co., Butner 1, swc se 3-9n-8e | * | 4380 |
| **Stephens—** | | |
| Skelly Oil Co., Stelfel 2, ne ne se nw 35-1s-5w | ¶1.5 | 670 |
| Beard, Levi Willis 7, sw sw se sw 23-2s-6w | 11 | 1753 |
| Levi Willis 8, 200 ft east c s½ sw 23-2s-6w | 3 | 1760 |
| **Tillman—** | | |
| I. T. I. O. Co., Graham 4, nwc ne 1-3s-19w | 46 | 3113 |
| **Tulsa—** | | |
| Pepis, Bishop 1A, 110 ft south cwl se ne sw 35-19n-12e | 8 | 1362 |

*Failures; †Junked; ¶Million cu. ft. gas.

1 of Champlin Refining Company, NWc SE 4-24n-8w, an offset to this company's Boehm 1, the discovery well, which was completed in Wilcox sand at 6703 feet. Mackey 1 is setting casing at 6611 feet. It had top of the Viola lime at 6589 feet.

The discovery well, SW SE NW 4-24n-8w, checked 12 feet lower than markers uncovered in Mackey 1, the south offset. The same company's Boehm 2, NE SE NW, another offset, is below 5800 feet and checking normal.

Crews are still trying to gain production from Garrett 8, C NW SW 21-2s-3w, the deep Fox pool area of Carter County, where Gulf Oil Corporation has deepened the hole to 8285 feet in the Oolitic lime. Last week it was testing 20 feet higher. The hole is now loaded with oil at the lower depth and an effort will be made to start it flowing with high-pressure gas. Three other wells are drilling in the area.

Small shows of oil and gas from 3030 feet were reported in the Garvin County wildcat of Eagle-Picher Lead Company, Butterly 1, NE SE 22-1n-1e. Drilling was continued. This test was taken over several months back. To the east in Murray County Gailbreath & Dutton opened a gas pool, Wolfe 1, C NE 8-1n-2e, in May, 1938. Last week it was making small amounts of black oil.

Among the scattered wildcats, the Hughes County test of Phillips Petroleum Company, Mandler 1, SE SW SW 1-6n-10e, has passed through both Wilcox sands without favorable reports and is drilling to test the Arbuckle lime. It is now at 5790 feet.

**Pictured are directors of the Kansas division of the Independent Petroleum Association of America, taken when they gathered in Wichita recently for the annual dinner meeting of the state group. From left to right are: Eben W. Pyle, A. S. "Andy" Ritchie, Ralph J. Pryor, T. C. Johnson, E. C. "Gene" Moriarty and George P. Dickey, all of Wichita; W. F. Hopper, Hutchinson; Rolla Clymer, El Dorado; Willis L. Hartman, E. B. Shawver, A. E. Lloyd and D. R. Lauck, all of Wichita. Shawver is president of the Kansas Independent Oil & Gas Association, and Lauck is IPAA vice president for Kansas.**

# Kansas Field Developments

***Wildcats in Westgate and Greenland showing as producers***

***New pool in Barton County is definitely assured.***

**Wichita.**—Despite the steady down trend in drilling activity, Kansas field development last week was typical of the year in that field discoveries and extension wells were numerous. Showings for the week were sufficient to warrant the conclusion that Western Kansas will add materially to its reserves in 1938.

Two wildcats are showing for new production, the first being Westgate and Greenland Oil Company's Krug 1, 18-15-13, Russell County, standing with 300 feet of oil in the hole after 2000 acid at 3051 feet. Darby Petroleum Company's Peavey 1, NW NW NE 24-11-18, at 3456 in Arbuckle swabbed 110 barrels of oil in 15 hours after acid. This well is in north central Ellis County.

Lack of market for oil already available could be accepted as the reason for the starting of only 15 wells during the week. The total is one of the lowest in the past four years. Completions numbered 23, a total fewer than half the average of a year ago.

The new pool of the week assured for western Kansas was indicated by a showing 10 days previous. It is three miles south of the Davidson pool, Barton County, where Sinclair Prairie Oil Company had pumping potential of 1313 barrels from Mary Prusa 1, SEc 20-16-11w, from Arbuckle lime between 3335 and 3352 feet. Oil tested 42-gravity.

Either a new pool or an extension for the Eichman field, Russell County, was made certain by W. I. Southern, Inc., whose Sellens 1-C, SWc 22-15-13w, pumped at the rate of 153 barrels daily from the Kansas City-Lansing lime section, total depth 3170 feet. It is three fourths of a mile north of production.

The half-mile extension north of the Schroeder field, Ellsworth County, was assured when Cities Service Oil Company completed Wessler 1, NE SE 19-17-9w, for 1427 barrels on the pump. It had top of the Arbuckle lime at 3224 feet and drilled to 3236 feet.

An extension, a half-mile west, for the north end of the Edwards field, Ellsworth County, came with completion by Continental Oil Company of Johnson A-1, SE NW 28-17-8w, which established potential rating of 1265 barrels daily on the pump. It is producing from Arbuckle, total depth 3248 feet.

Although potential test has not been taken the showing a half-mile south of the Bemis pool, Ellis County, is encouraging. Here Cities Service Oil Company has 2300 feet of oil in the hole in Hall D-1, C NW 2-12-17w. Casing is being set at 3593 feet with bottom of the hole at 3602 feet in Arbuckle lime.

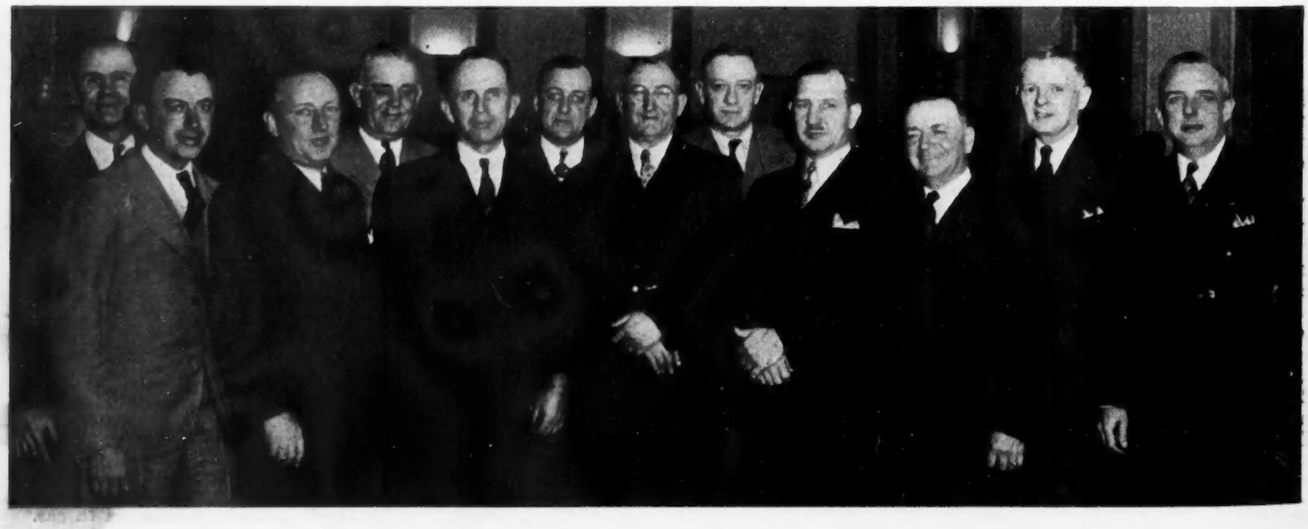
## *Speakers caution Kansas producers on control*

Both Burdette Blue, Indian Territory Illuminating Oil Company, Bartlesville, and Rolla Clymer, editor of the El Dorado Times, cautioned the oil industry to stick by individual enterprise. The occasion was the banquet of the first annual meeting of the Kansas Oil & Gas Association at Wichita, December 16 and 17.

Concerning the plight of the producer, especially in Kansas, Blue said:

"We know we cannot take the route of the interstate oil compact with a guarantee of safe arrival at our destination. So we necessarily conclude that if we are to look to government that only federal control is left and the sentiment of the industry at this time seems to be opposed to that. Some of us do favor, at least in the abstract, the idea of a federal arbiter or umpire, but most of us seem to fear that if we asked Washington for this much relief that we would get a whole lot more, most of which we would not want.

"We are all mindful of the difficulties



attendant upon voluntary cooperation but it is either that or 'else' and if we desire to avoid the 'else' we must learn to govern ourselves and make cooperative action succeed and economic democracy work."

In the same vein the El Dorado editor said:

"If you oil men work yourselves out of the present slough of despond you will have to do it largely yourselves. You will find that leaning upon a paternally-minded government will get you nowhere as to a permanent emergence from your troubles."

Through its board of directors the association reelected E. B. Shawver, Wichita, president. D. R. Lauck, Wichita producer, was reelected first vice president. John Denman, Independence, was elected vice president to succeed A. H. Witt of Russell. Denman formerly was third vice president, a post that went to Ralph Nicholson, Ellis banker and royalty owner. James Davis, Jr., Wichita, was elected secretary to succeed F. G. Stoddard, Wichita. Joe Aylward, Wichita, was reelected treasurer. H. A. Mayer, Wichita, was reappointed managing director of the association.

By-laws of the association were changed to increase the board of directors to 44, which made it necessary to elect 32 at the meeting, 10 for 2 year terms and 22 for 1 year terms as follows:

For 1 year terms: John Allison, McPherson; H. H. Beardmore, Wichita; John Braden, Hutchinson; W. L. Hartman, T. C. Johnson, R. D. Lauck, E. H. Adair, E. C. Moriarity, Lee Scott and F. G. Stoddard, all of Wichita.

For 2 year terms: L. B. Babb, Wichita; Guy Berry, Independence; Arthur Brewer, Winfield, George Bruce, Wichita; O. J. Connell, Winfield; Courtney Davis, Wichita; Walter Fees, Iola; James Davis, Jr., Wichita; J. B. Foster, Wichita; M. B. Carden, Hutchinson; Ted Gore, John Harwood, John O'Shaughnessy, Robert F. Pielsticker, W. E. Reeves and Earl F. Wakefield all of Wichita; T. A. Helling, El Dorado; Homer Ira, Chase; Paul R. Johnson, Independence; Ward McGinnis, Eureka; Ralph Nicholson, Ellis, and G. H. Plant, Burrton.

## KANSAS
## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Barton—** | | |
| Sinclair Prairie Oil Co., Mary Prusa 1, nw sec 20-16s-11w | 1313 | 3352 |
| Stanolind Oil & Gas Co., Fred Panning 14, 100 ft south cwl nw ne se 3-20s-11w | 188 | 3305 |
| Gulf Oil Corp., Spanier "A" 4, c n½ n½ nw 12-20s-11w | 2994 | 3277 |
| Hilligoss et al, Isern "B" 6, nwc ne 12-20s-11w | 253 | 3284 |
| Kaiser & Newton, Hagen 1, swc 20-20s-11w | 669 | 3330 |
| **Cowley—** | | |
| Brewer, City of Windfield 3, nw se sw 15-30s-4e | * | 2791 |
| Wakefield, David 2, sw nw se 2-31s-4e | * | 2996 |
| Roth Oil & Gas Co., Sherwood 2, swc 11-31s-4e | 15 | 2982 |
| McKnabb & Blair, Hittle 2, nw se ne 21-31s-4e | 4238 | 3315 |
| **Ellis—** | | |
| Darby Petroleum Corp., Peavey 1, nwc ne 24-11s-18w | 25 | 3429 |
| Hall et al, Oswald "B" 5, nw sw se 11-12s-16w | 1130 | 3112 |
| **Greenwood—** | | |
| Reed, Trustee, Shell 1, nwc se 17-28s-11e | 25 | 1227 |
| **Kingman—** | | |
| Bunte Bros., Shephard 1, sec 10-27s-10w | 50 | 4086 |
| **McPherson—** | | |
| Continental Oil Co., et al, Goering 9, csl sw ne sw 29-21s-1w | 407 | 3303 |
| **Reno—** | | |
| Olson Oil Co., Downie 4, nwc ne 14-23s-4w | (input well) | 3303 |
| **Rice—** | | |
| Continental Oil Co. et al, Pickerill 4, nwc se 13-18s-8w | 2347 | 3214 |
| Gum 3, nwc se 34-19s-10w | 569 | 3315 |
| Garden, Werner 1, nec 10-21s-9w | * | 3443 |
| **Russell—** | | |
| Phillips Petroleum Co., Wineteer 4, nw sw se 19-13s-14w | 247 | 3018 |
| Shell Petroleum Corp., Mary Dumler 4, ne se sw 36-15s-14w | 1234 | 3324 |
| **Stafford—** | | |
| E. H. Moore, Inc., Cleo Johnson 2, swc se 13-24s-11w | 464 | 3816 |
| Sinclair Prairie Oil Co., Krey 6, nw sw ne 14-24s-11w | 1492 | 3808 |
| Stanolind Oil & Gas Co. et al, Hartnett 4, c w½ se 23-24s-11w | 1107 | 3813 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Illinois Developments

***Marion County Devonian flow opens deep test campaign. Lake Centralia field production is extended further west.***

Olney, Ill. — Possibility of an eventual extensive deep well drilling program in the Illinois basin area was strengthened last week when Southwestern Oil and Gas Company's Benoist 21, NW NW NE 8-2n-1e, Marion County, Sandoval Township, started flowing by heads from the Devonian, making 45 barrels in 45 minutes. Operators predicted it would be capable of making over 1000 and possibly 2000 barrels initial on completion. The well, one mile north of Sandoval and eight miles north of Centralia, drilled six feet into the Devonian Silurian, topped at 2920 feet.

With twenty wells producing from the Benoist sand, named for this farm, at about 1500 feet for the past 30 years, the Benoist 21 is the first deep test in the area. It will be the forerunner of additional deep tests in this section of the basin. Dry hole money for the test was furnished by one of the major companies.

The Benoist sand was found unproductive in 80 acres of the 210-acre farm, but this formation has already yielded 20,000 barrels from each of the remaining 130 acres, or a total of 2,600,000 barrels for the entire farm since the first well was drilled. The deep hole was started last September with cable tools, and has been drilling intermittently since.

A promised half mile west extension to the Lake Centralia pool of Marion County is given by J. L. Gardenhire's Speaks 1, NE SE 12-1n-1e, in the south end of the pool, which cored two breaks in the McClosky between 2119-25 and 2148-56 feet. Two dry holes had previously been drilled in this area. Oil string has been cemented and standard tools were being moved in to drill out plugs.

After plugging back several times in an effort to shut off water in the lower McClosky, Magnolia Petroleum Company's Dare 1, wildcat in SE SW NE 22-3s-2e, McClellan Township, Jefferson County, may be commercially completed. The test had been drilled to 2770 feet, and now is plugged back to 2735 feet. After a thousand gallon acid treatment at this depth, only mud and oil were swabbed and it appeared that water had been successfully shut off. A 3000 gallon treatment then was given, but the outcome had not been determined.

In the Casner Township area of Jefferson County, opened by Magnolia several weeks ago with its T. J. Harvey 1, Beaver et al's Eichman 1, NE NE 28-2s-1e, cored excellent saturation in both the Rosiclare and McClosky, as did the discovery half mile away. Cement failed to set when casing was run because of the presence of a large quantity of oil in the hole, and completion was delaved. The third completion in this area will be Magnolia's Langa 1, SW SW SE 27-2s-1e, drilling at 2100 feet.

Dennis, Blair et al's Murman 1, NE NE 15-2s-1e, was temporarily shut down at 300 feet because of a break down. Casner Township locations announced during the week were Magnolia's Rutkowski 1, offsetting the Eichman 1, to the north, and Oflker 1, offsetting the Rutkowski 1 on the east.

A revival of hopes of extending the Lake Centralia-Salem pool to the north came with announcement that Hull-Stouffer and Boughter's Martin 2, SW 10-2n-2e, a short distance west of Salem, cored an excellent McClosky saturation. The test is one location west of the No. 1 on this lease, where attempts are being made to shut off water.

In the eastern Fayette County pool, Forest Development Company's Barnes 1, in the southwest corner of Avena Township, extended the producing area half mile to the southwest. Available tankage was filled by swabbing, and although a production test has not yet been made, the outpost is described as a good producer. Watched as a possible northeast extension of the Avena producing area was Carlos Wagner et al's M. Durbin 1, SW SE SE 4-7-3, nearing completion in the Stein sand.

On a block of 500 acres in Wilberton Township, two miles west of St. Paul, Fayette County, Chris Rabe's Lange 1, SW SW 28-5n-2e, a wildcat, was started last week. With acreage in the area scattered between a large number of independent operators, the test will attract more than usual interest. Ed Runwaldt, the drilling contractor, was drilling below surface pipe.

American Seismograph Company had the second dry hole in northern Fayette County in its Bates 1, one mile west of Shobenier, abandoned at 1800 feet. Also abandoned was the R. Durbin 1, Section 31-9n-3e.

The Cypress sand pool along the Noble-Denver Township line of Richland County first sand producing area in the deep part of the basin opened during the current development campaign, is increasing in importance from week to week. Pure Oil Company last week completed the fourth well in the pool, the F. Wakefield 3, Section 24-4, N-9e, at 2600 feet as an excel-

lent pumping well and has cored an excellent saturation in Wakefield 4, where casing was set at 2595 feet. A mile east of the Wakefield lease, Dyson-Anderson's Wheeler 1, Section 24-4n-9e, was building derrick. Other operations in the pool were Pure Oil Company's H. Cazel 2, Section 23-4n-9e, building derrick, and Carter Oil Company's H. Sparr 1, Section 23-4n-9e, clearing location.

In the North Olney pool, Richland County, Kingwood Oil Company's W. H. McCane 1, Section 35-4n-10e, was abandoned at 3141 feet when salt water filled the hole, thereby dashing for the third time hopes of Olney citizens for a well within the city limits. Across the road and just outside the limits, The Texas Company's Winters 2 met a similar fate when plugs were drilled to 4 feet of McClosky saturation.

Activity in the North Olney pool is dropping, the only other active tests being Pyramid Oil Company's Ed J. Houser 1, Section 15-4n-10e, rigging up; Chas. Skinner et al's Sylvan Iris School 1, Section 23-4n-10e, drilling at 2200 feet; and The Texas Company's Mrs. W. Elliott 2, Section 22-4n-10e, building derrick.

On the Wabash railroad right-of-way between Stewardson and Strasburg, Shelby County, Sylward and Corn spudded a wildcat last week. It is in Section 27-10n-5e.

G. H. Blankenship's Dennis 1, wildcat in the SE NE 14-3s-3w, south of Nashville, Washington County, halted operations at 1233 feet after reportedly coring the Benoist sand. Whether or not saturation was recovered was not revealed.

## ILLINOIS
### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Brown County—** | | |
| Fell Oil Trust Co., J. Thomas 1 | * | 642 |
| **Clark County—** | | |
| Firman Equipment Co., S. B. Allen Estate 1 | * | 498 |
| **Clay County—** | | |
| Pure Oil Co., P. Edens 1 | 216 | 3060 |
| Sol Smith 4A | 387 | 3045 |
| Tetrick 8A | 392 | 3005 |
| Daisy Bunn 3B | 460 | 3008 |
| Kingwood Oil Co., Katy Cox 1 | 119 | 2077 |
| **Clinton County—** | | |
| H. H. Weinert, Buehler 2 | 50 | 1371 |
| Buehler 3 | 120 | 1373 |
| White et al, Wilten 1 | * | 1188 |
| Sappington et al, Hilgemann 1 | * | 1150 |
| **Fayette County—** | | |
| W. C. Stephenson et al, Harkless et al 1 | * | 1580 |
| Texas Co., N. Swarm 2 | 192 | 1590 |
| J. Swarm 1 | 160 | 1595 |
| Ray Brown, Hopper 8 | 75 | 1570 |
| Magnolia Petroleum Co., T. C. Clow 8 | 112 | 1864 |
| T. C. Clow 10 | 192 | 1590 |
| Della Rhodes 4 | 75 | 1598 |
| Sarah Clow 3 | 195 | 1529 |
| Sarah Clow 4 | 205 | 1582 |
| J. E. Mabee, Lay 2 | 122 | 1483 |
| Mabee Drilling Co., First National Bank 7 | 126 | 1601 |
| Kapp 2 | 50 | 1556 |
| Jarvis Bros., Yakey 4 | 180 | 1594 |
| Carter Oil Co., H. S. Williams 1 | 51 | 1515 |
| O. Ferguson 2 | 109 | 1544 |
| Harvey Durbin 1 | 140 | 1530 |
| Ola Harper 1 | 217 | 1582 |
| J. R. Morrison 2 | 168 | 1478 |
| Thomas Mills 2 | 168 | 1532 |
| T. B. Taylor 1 | 238 | 1562 |
| T. B. Taylor 2 | 330 | 1590 |
| M. J. Griffith 1 | 193 | 1586 |
| Clinton Miller 1 | 385 | 1591 |
| T. Wright 3 | 226 | 1583 |
| H. O. Lewis 1 | 90 | 1579 |
| Paul Dunaway 2 | 192 | 1510 |
| A. Watson 2 | 169 | 1586 |
| Papoose Oil Co., Owens 4 | 75 | 1496 |
| Sherman et al, Burtschi 11 | 50 | 1602 |
| Angle et al, Ferguson 4 | 234 | 1527 |
| Central States Oil Corp., L. McKenzie 2 | 200 | 1590 |
| Whisenant et al, Smith 2 | 180 | 1578 |
| Smith 3 | 200 | 1579 |
| Johnson, Philbrook 1 | 80 | 1560 |
| Philbrook 2 | 150 | 1564 |
| E. F. Jones, Wright School 1 | 125 | 1614 |
| Wright School 2 | 250 | 1594 |
| Minerva Oil Co., Tish 8 | 50 | 1569 |

# Indiana Developments

***Gibson County well makes over 100 barrels oil per hour. New strike is 25 miles from nearest McClosky production.***

**Evansville, Ind.** — Fitzpatrick and Hayes, (W. A. Allen) Cooper Estate 1, SE NW NE 13-3s-14w, Wabash township, Gibson County, shot a solid column of oil over the top of the 96-foot steel derrick when plugs were drilled to the McClosky last week and gave indication of being the largest well drilled in Indiana and perhaps one of the largest in the Illinois Basin area.

The wildcat was flowing by heads as operators were attempting to run the two-inch tubing to the top of the lime. It made 53½ barrels of oil in thirty minutes through a half-inch choke nipple. Production estimates ranged from five hundred barrels up. Tankage was being erected and, meanwhile, some oil was being trucked from the lease. Porous McClosky was found between 2896 and 2946 feet. The well is 25 miles from present McClosky production.

On a 1600-acre lease originally obtained by W. A. Allen, Sr., Tulsa operator, the pool opener is surrounded by holdings of independent operators. The lease has been parceled out among a group of independent operators—E. Amis, Kernel Hughes, H. B. Houseman, James B. Bond, Judge W. G. Priest, Jack Fitzpatrick, Granville Hayes and others—who supported the test. Continental Oil Company is the only major holding nearby acreage, having purchased an 80-acre tract just north of the wildcat.

A closely watched wildcat was Parshall-Graham Oil Company's M. J. Simpson 1, SW NE NW 23-1n-10w, which was drilling below 3213 feet after coring the Devonian to that depth. Only a slight saturation was found in that lime formation, topped at 3127 feet, although commercial saturations were found at 1713 and 1758 feet, and 40 feet of porous Salem was drilled through below 2000 feet. The test is backed by a major, and when drilling is finally stopped an electric test will be made to determine the value of porous strata passed through.

Sole registered completion of the week was Sun Oil Company's Dietz 2, NW SW SE 1-7s-12w, another well in the new Heufler pool of Posey County, which this company opened recently. Saturation was between 1798-1812 feet, and the hole is bottomed at 1820 feet. It produced 141 barrels of 37-gravity oil in 24 hours after a shot with 20 quarts. One mile east of Sun Oil Company production here, J. B. Bond's Keck 1 was erecting derrick. It is in Vanderburgh County.

In Posey County, Sun Oil Company was still working over W. W. Gray 3, SE SE NE 20-8s-14w, Point township. Acid treatment was given last week. Four miles east of Mt. Vernon in this county, W. G. Allender and Earl Witt will drill Scherer 1 on a 431-acre lease in Section 13-7s-13w. It will be carried to the McClosky or deeper, using rotary tools. Derrick was being erected last week.

Other new tests include Logan Wright et al's W. Schauss Estate 1, SW 35-3s-1ew, two miles north of Stewartsville and four miles east of the Cooper Estate 1 pool opener, where road was being cut to the location, and Ansel A. Douglas and O. L.

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Fulton County—** | | |
| Ketcherside & Fisher, Quigle & Freeburg 1 | * | 657 |
| **Jefferson County—** | | |
| Carter Oil Co., M. Foster 4 | 237 | 1959 |
| **Marion County—** | | |
| Pruitt Bros., Kabola 1 | * | 769 |
| Roberts Bros., G. Pittenger 2 | 300 | 1801 |
| Roberts & Murphy, Dempsey 2 | * | 1730 |
| W. R. Curry, L. Hawthorne 2 | 250 | 1765 |
| Texas Co., H. Small 2 | 700 | 1801 |
| W. Martin 1 | 141 | 1828 |
| N. Young 3 | 330 | 1783 |
| N. Young 4 | 198 | 1774 |
| D. Young 6 | 210 | 1835 |
| O. F. Talford 2 | 46 | 1765 |
| F. J. Canull 8 | 350 | 1770 |
| Ed Tate 5 | 260 | 1985 |
| W. C. McBride, Inc., Wm. Tyke Heirs 1 | 159 | 1785 |
| Mammoth Producers & Refiners Co., Seibel 4 | 250 | 2116 |
| Bachman 7 | 12 | 2118 |
| J. J. Deaner, Burge 3 | 20 | 2197 |
| Mid Valley Steel Co., Bidwell 1 | * | 2195 |
| Lad Oil Co., Grand Prairie Church 2 | 74 | 1999 |
| Claro et al, W. O. Chitwood 1 | 100 | 2137 |
| Rossi, Chitwood 1 | 70 | 1886 |
| Brooks 3 | 250 | 1781 |
| Magnolia Petroleum Corp., W. O. Chitwood 6 | 240 | 1911 |
| D. A. Shanafelt 8 | 288 | 1834 |
| W. B. Young 9 | 290 | 1849 |
| J. H. Young 6 | 489 | 1822 |
| W. O. Chitwood 2 | 108 | 2113 |
| J. H. Young 5 | 480 | 1787 |
| D. A. Shanafelt 7 | 264 | 1837 |
| J. H. Young 14 | 264 | 1800 |
| J. H. Young 16 | 192 | 1859 |
| J. H. Young 10 | 216 | 1777 |
| J. H. Young 4 | 260 | 1773 |
| J. H. Young 12 | 192 | 1800 |
| J. H. Young 9 | 216 | 1773 |
| J. H. Young 11 | 288 | 1806 |
| J. H. Young 13 | 216 | 1802 |
| S. Shanafelt 10 | 384 | 1809 |
| J. R. Young 7 | 490 | 1789 |
| J. R. Young 4 | 285 | 1779 |
| J. R. Young 8 | 240 | 1785 |
| S. Shanafelt 11 | 204 | 1763 |
| Shell Petroleum Corp., Young Heirs 2 | 200 | 1774 |
| Salem Bank 4 | 176 | 1775 |
| Farthing 5 | 475 | 1778 |
| Farthing 6 | 414 | 1733 |
| Kingwood & Bell, S. Shanafelt 5 | 370 | 1814 |
| S. Shanafelt 6 | 202 | 1816 |
| Ohio Oil Co., M. Young Heirs 3 | 82 | 1790 |
| J. Mitchell, F. Lee 1 | 64 | 1774 |
| Wiser Oil Co., H. Weems 4 | 375 | 1998 |
| Adams Oil & Gas Co., A. & C. Cox 3 | 58 | 1448 |
| **Morgan County —** | | |
| Alexander Oil Co., Tom Cockin 2 | * | 450 |
| **Richland County—** | | |
| Pure Oil Co., Ring-Burr 2 | 18 | 3015 |
| H. Cazel 1 | 567 | 3007 |
| Texas Co., W. Elliot 1 | 99 | 2998 |
| C. Winters 1 | 105 | 3130 |
| Wicklund Development Co., First National Bank 1 | * | 3130 |
| **Shelby County—** | | |
| Dan Moore et al, Clay Estate 1 | * | 1700 |
| Black et al, Hopkins 1 | * | 1918 |
| **Wabash County—** | | |
| Hoffman, C. King 1 | 60 | 1435 |
| **Wayne County—** | | |
| Pure Oil Co., G. Zimmerman 1 | 505 | 3005 |
| H. Sessel 2 | 4 | 3341 |
| H. H. Weinert, Inc., Morlan 2C | 400 | 3336 |
| Morlan 2B | 600 | 3320 |
| Morlan 3B | 216 | 3325 |
| Texas Co., R. Lyons 3 | 400 | 3352 |
| J. Harris 1 | 608 | 3344 |
| Ed Martin & Stokes, D. Shaeffer 1 | * | 3384 |
| Holland, F. Bruce 1 | * | 3440 |

*Failures; †Junked; ¶Million cu. ft. gas.

Greer's wildcat in Section 4-6s-6w, 8 miles north of Rockport, Spencer County, the latter will be carried to the Devonian.

After a month's fishing job just above the McClosky level, Frank Dameron et al's A. W. Haines 1, NW NE SE 34-7n-6w, Ohio township, Spencer County, just about had the hole cleared at 1475 feet last week and was preparing to resume drilling. This test is believed to have less than ten feet to go to reach the McClosky.

Sun Oil Company's Clay County cable tool test to the Devonian, W. A. Brown 1, NW NW SE 8-9n-7w, Lewis township, was setting 8-inch to 1205 feet. The Devonian is expected at about 1500 feet.

Sycamore Oil Company will drill Prudential Life Insurance 1 on a 400 ½-acre farm in the NE NE NW 7-7w-7w, Spencer County.

# Kentucky

## *Webster County wildcat flows 100 barrels daily*

**Owensboro, Ky.**—Browning et al's J. R. Ramsey 1, south of Sebree Springs, Webster County, was flowing 100 barrels a day last week from the McClosky between 1396-1400 feet following treatment with 1000 gallons of acid. This wildcat had been drilled last fall to 3217 feet and abandoned, the McClosky show ignored until oil showed in the hole a few weeks ago. It was cleaned out and when a pump was installed, produced 25 barrels a day. The wildcat is 600 feet south of a well drilled in 1914 which, while it had both oil and gas showings, was never commercially produced. An offset is to be drilled on the same tract next month.

Continuing the "revival" trend, Thomas et al were cleaning a hole drilled in 1918 on the Meacham lease near Bluff Springs, Christian County, which was abandoned as non-commercial. Considerable oil has already been swabbed from the Jett sand at 482 feet and the hole was being prepared for a shot in the McClosky between 988 and 1015 feet, after which that formation will be acidized. If commercially completed, the well will open Christian County's first oil pool.

R. Hal Compton Crude Oil Purchasing Company entered the Birk City pool of Henderson and Daviess Counties last week to furnish another outlet in this congested area. The company has completed a pipe line northwest to a loading rack at Newman, Kentucky.

The test that opened the Birk City pool was started with a cable tool rig just a year ago last week, and the now eight-months old field numbers over 100 producing wells. The percentage of dry holes drilled in developing the area is under 7 percent.

Western Kentucky, as well as other sections of the Illinois Basin area, is experiencing the seasonal lull with operations by major operators, particularly, at a very low ebb. Many independent operators who flocked to the Illinois section of the basin in the past 18 months and to Kentucky during the past eight months, left for their homes in Kansas, Oklahoma, and Texas last week for the holidays.

In the new Spottsville pool of Henderson County, Magnolia Petroleum Company's Annie Green 1, offsetting the big discovery 660 feet to the east, flowed natural at the rate of 18 barrels an hour last week. It has not been given acid treatment. It is the fifth well drilled in this area by Magnolia, but only the second satisfactory producer. J. W. Isabell 1, half mile east of the Green well, is a very light producer. The company gave the second acid treatment to the Cordie Neal 1, but it was pumping very little oil. Efforts also were still being made to gain commercial production at W. H. Negley 1.

Indications are that the Spottsville pool extends east from the Green wells, which, if true, materially improves the prospects of Ralston & Sale's Ferry 1. Successful completion of that well would precipitate a townsite drilling boom in Spottsville. Magnolia has staked a location on the J. E. Casey tract, directly offsetting the two Green wells. Another test to start shortly in the Spottsville area is Maurice Grubb et al's Cooksey 1.

A. A. Douglas has started a new test on the Ohio river bottoms on the Hann track, two miles south of this operator's Jas. E. Rankin 1, wildcat on the Horse Shoe Bend opposite Evansville. Rankin 1 was drilling in the Goldconda limestone at 2031 feet. The McClosky is expected at 2350 feet.

In Daviess County, Mecca Oil Company's Johnson 1, near Cane Run, was completed as 100-barrel well, opening a new McClosky producing area.

Between Birk City and Spottsville, Miller & Shiraella's Rausch 2 was drilling at 1105 feet after setting 10-inch to 1100 feet.

## KENTUCKY Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Butler County—** | | |
| Phillips & Evans, Brown 4 | 5 | 412 |
| **Daviess County—** | | |
| W. E. Hupp & Snowden & McSweeney, Taylor 8 | 210 | 1894 |
| Aetna Oil Service Corp., Miller 1 | 180 | 1919 |
| Fordsville Oil Co., Coomes 3 | 10 | .... |
| Major Oil Co., Mulligan 1 | * | 1880 |
| **Floyd County—** | | |
| F. Williams, Stanley Heirs 4 | ¶.25 | 2710 |
| **Hancock County—** | | |
| Ellis, Mason 10 | 75 | .... |
| **Henderson County—** | | |
| Cumberland Petroleum Co. et al, Griffith 1 | 5 | 1924 |
| Shoemaker et al, Busby 1 | * | 2184 |
| **McLean County—** | | |
| Reynolds et al, Howell 5 | 25 | 1144 |
| Cleopatra Oil Co., Moseley 1 | * | 820 |
| **Martin County—** | | |
| Spears, York & Ratliff 2 | ¶.22 | 3032 |
| Webb et al, Spears 1 | ¶.03 | 2618 |
| **Ohio County—** | | |
| Lewis et al, Westerfield 1 | 5 | 676 |
| Hupp et al, Schultz 1 | * | 800 |
| Wilson, Barr Estate 3 | * | 1407 |
| May et al, Howard 1 | * | 600 |
| **Pike County—** | | |
| Mountain Oil & Gas Co., Alley 1 | ¶.24 | 3600 |
| **Union County—** | | |
| Kentucky Natural Gas Co. & Sun Oil Co., Mills 1 | * | 2246 |

*Failures; †Junked; ¶Million cu. ft. gas.

## *A.A.P.G. changes annual meeting headquarters*

This is to announce that the twenty-fourth annual meeting of the American Association of Petroleum Geologists which has already been announced for March 22-24, 1939, is to be held at the Skirvin Hotel, Oklahoma City, Oklahoma. The Skirvin Hotel will be convention headquarters where the technical program, the scientific exhibits, the dinner dance and committee meetings will be held.

## *Magnolia buys pipe line in Illinois*

Magnolia Petroleum Company last week purchased a crude oil pipe line between Wood River, Madison County, Illinois, and the Socony-Vacuum Oil Company's Lubrite refinery at East St. Louis, Illinois. The purchased unit completes a line from the Lake Centralia field of Marion County, Illinois, to the refinery.

Magnolia is moving its own production through the line, in addition to some crude purchased from Sohio Pipe Line Corporation. The average daily run is about 7000 barrels.

# EASTERN FIELDS

## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **OHIO** | | |
| **Athens County—** | | |
| McBill Oil Co., Sapp 3 | 1 | 470 |
| D. T. Orndoff, Bryson 2 | ¶.10 | 1414 |
| **Coshocton County—** | | |
| Ohio Gas, Light & Coke Co., Bender 2 | ¶.10 | 951 |
| Bell Bros., Wilt 1 | * | 3140 |
| **Guernsey County—** | | |
| Cambridge Glass Co., Burk 1 | ¶.10 | 1027 |
| **Knox County—** | | |
| Brown, Lescalleet 1 | 1 | 770 |
| Pure Oil Co., McCamment 1 | ¶.40 | 3171 |
| Norris Oil & Gas Co., Norris 1 | ¶ | 541 |
| Wheeler Oil Co., Davidson 1 | * | 3067 |
| **Licking County—** | | |
| Blue Rock Oil Co., Moran 6 | 80 | 3071 |
| J. C. Bebout & Son, Steinmeir 1 | ¶.50 | 2517 |
| C. A. Davis, Woodruff 1 | ¶.40 | 2150 |
| **Lorain County—** | | |
| Ohio Fuel Gas Co., Campbell 2 | ¶.50 | 2217 |
| **Meigs County —** | | |
| Marshall et al, Hysell 3 | ¶.70 | 1055 |
| **Summit County—** | | |
| East Ohio Gas Co., Brum 1 | ¶.50 | 4261 |
| **Washington County—** | | |
| Cullen, Cullen 1 | ¶.40 | 1364 |
| **WEST VIRGINIA** | | |
| **Boone County—** | | |
| Hope Natural Gas Co., Nunnencamp 7839 | ¶.14 | 3004 |
| **Cable County—** | | |
| Adkins, Lucas 1 | ¶.22 | 2194 |
| **Calhoun County—** | | |
| Garrett et al, Fogel & Wilson 3 | ¶.56 | 1903 |
| Carroll, Cain 1 | ¶.20 | 2271 |
| **Kanawha County—** | | |
| United Fuel Gas Co., Gibbons 4811 | ¶13.80 | 5046 |
| Canterbury 1 | ¶3.05 | 5145 |
| Hays Oil & Gas Co., Ray 1 | ¶11.90 | 5050 |
| **Lincoln County—** | | |
| Adkins, Lovejoy 1 | ¶.50 | 3610 |
| **Pleasants County —** | | |
| Deem et al, Carter 1 | 250 | 1950 |
| **Ritchie County—** | | |
| Borders Oil & Gas Co., Border 2 | * | 2285 |
| **Tyler County—** | | |
| Pigott, Ash 1 | ¶.08 | 1955 |
| **PENNSYLVANIA** | | |
| **Greene County—** | | |
| Equitable Gas Co., Durr 1 | ¶.03 | 2792 |
| Ross 1 | * | 3283 |
| **Bradford District** | | |
| Mix Creek Oil Co., Fee | 1 | .... |
| Curtis & Dunlavey, Fee | 5 | .... |
| Adolph Schorman, Fee | 1 | .... |
| Forest Oil Corp. | 1 | .... |
| Niagara Oil Corp., 3 wells | 3 | .... |
| Bradford Transit Co., 7 wells | 7 | .... |
| O. B. & F. Oil Co., 497 Bing | 1 | .... |
| T. H. Kervin, Jr., No. 5, Adams | 1 | .... |
| **Bradford: Water (Pressure) Wells** | | |
| Forest Oil Corp., 2 wells | ... | .... |
| **Butler-Armstrong District** | | |
| Citizens' Nat'l Bank, Evans City, H. McNally | 3 | .... |
| **Middle District** | | |
| Moyer & Lamey, J. F. Caffery | 1 | .... |
| Thomas & Lamberton et al, P. M. Hollister | 1 | .... |
| **New York-Pennsylvania: Gas Field** | | |
| G. L. Cabot, Inc., George Hotaling | ¶ | .... |

*Failures; †Junked; ¶Million cu. ft. gas.

# West Texas Fields

***Show in Seminole extension try is of doubtful value.***

***Garza County strike killed to rework after water increase.***

**Midland, Texas.**—A two-mile east extension for the north portion of the Seminole pool, Gaines County, sought by Harry Adams, Bradley et al's G. Crain-Ohio 1, C E½ SW NW W. T. Section 216, Block G, was considered doubtful in making a producer after using acid at 5287 feet, or 1874 feet sub-sea. This outpost logged soft lime at 5235-73 feet, then deepened after testing dry. The well yielded 4 barrels of oil on swabbing test after using 1500 gallons of acid at 5287 feet. It is on the east flank of the axis of the structure that extends northwest from the original producing area, and is bottomed near the water level. Atlantic Refining Company and Osage Drilling Company's Tippett 1, west offset to the north outpost producer, logged top of the anhydrite at 2050 feet, and was fishing at 2073 feet.

The Texas Company's H. T. Boyd 1, Labor 25, League 56, 1¼-mile southeast outpost for the Duggan pool, Cochran County, plugged back from small show of water at 5092 feet, or 1421 feet sub-sea, and was awaiting acid treatment in saturated lime at 5059-86 feet. The well swabbed 13 barrels of oil daily after plugging back. It is structurally low for the area.

Gulf Oil Corporation's Swenson 1-B, important lower Pennsylvanian lime strike in northeastern Garza County, remained off production the past week while attempting to shut off water in perforated pipe at 7327-34 feet. It is scheduled to gun-perforate the 7⅝-inch pipe opposite the deepest of 5 oil saturated horizons logged in drilling to granite at 8104 feet. The well indicated a commercial oil producer at 7327-34 feet on December 2, but water broke in several days later. Approximately 1500 barrels of 36.7 gravity oil was produced before the well was killed.

The Ordovician horizon in the Sand Hills field, Crane County, contributed another prolific oil and gas well when Gulf Oil Corporation's Waddell et al 9, C NE NE PSL Section 7, Block B-27, earned a potential rating of 2678 barrels of 45.1 gravity oil and 17,208,000 feet of gas through 7-inch casing at 6006 feet. This well extends production a half-mile to the southeast, and will require an east offset by Gulf Oil Corporation and Cranfill Bros. et al, while a northeast offset will likely be drilled by Sinclair Prairie Oil Company. Waddell et al 9 developed the big gas flow from sand at 5842-53 feet in the Simpson, topped at 5830 feet. This upper gas was accompanied by a 5-barrel hourly flow of 56 gravity distillate. The oil is from the Ellenberger limestone, topped at 5936 feet, with an elevation of 2545 feet.

Ohio Oil Company's Popham 1, wildcat in the south portion of Reeves County, developed a "few" gallons of oil in hole from shows passed up at 5730-40 feet and 5800-10 feet, and was drilling in hard gray lime at 5990 feet. Located near SW NE NW T&P Section 18, Block 54, Tsp. 10, near center of a 16,700-acre lease block, Popham 1 failed to show oil or gas in Delaware sand, which was encountered at 5030 feet. Top of the black lime was called at 4938 feet, with an elevation of 3623 feet. The above oil show may be from the Bone Spring, or Wolfcamp formations, which are found immediately below the Delaware section in this region.

Crusader Petroleum, Inc.'s A. D. Neal 1, Glasscock County, wildcat, was listed as a failure at 2720 feet, having encountered sulphur water in the big lime at 2683 feet.

Additional drilling is in store for several oil areas in Winkler County as result of lease farmouts that require development. Humble Oil & Refining Company assigned Sam Weiner et al its lease on the SE¼ PSL Section 11, Block B-12, retaining 1/16 over-riding royalty interest. Joe C. Maxwell and others farmed out the N½ SW¼ PSL Section 25, Block B-5, to C. V. Lyman et al on the same terms.

George McQueen, drilling contractor, is reported to have paid a consideration of $22,673 for lease on the S½ N½ G&MMB&A Section 47, Block F, centering on the Winkler-Ward County line, and a half-mile north of the Magnolia-Sealy pool. The latter has two pay zones, and is receiving its long-deferred drilling campaign, with Magnolia Petroleum Company carrying on continuous development on its discovery site. Gulf Oil Corporation's O'Brien 105, SW NW NW Section 35, offsetting a producer, tested 6 barrels of oil in 4 hours at 2900 feet, having drilled through the upper pay. It is due to be carried to the lower pay near the 3100-foot level.

The Payton and Pecos Valley pools, which overlap the Pecos River into Pecos and Ward counties, are becoming standout drilling centers in West Texas. New entrants are pushing developments in order to share in the flowing production found near the 2000-foot and 1600-foot levels, respectively. Texoil Producers, Inc., recently formed as result of the consolidation of holdings of A. E. Lynch et al, and those of Foyd C. Dodson et al, plans to proceed with the development of leases in the above two areas. Lynch has been elected chairman of the board, and other officers are: Frank T. Pickrell, discoverer of the Big Lake field and other West Texas areas, president; Dodson and Jean E. FitzPatrick, vice presidents. The company has 21 wells in Ward and Pecos counties, and 35 shallow wells in Rogers County, Oklahoma.

## WEST TEXAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Andrews County (Fuhrman)—** | | |
| Barnsdall, Ford 5 | 1531 | 4465 |
| **Andrews County (Wildcat)—** | | |
| Rogers & Rogers, University 1 | * | 4539 |
| **Crane County (Gulf-McElroy)—** | | |
| Gulf, McElroy 184 | 1185 | 2931 |
| **Crane County (Gulf-Waddell)—** | | |
| Gulf, Henderson 15 | 4400 | 3520 |
| Waddell 24 | 1952 | 3540 |
| **Crockett County (Crockett)—** | | |
| Gilcrease Oil Co., University-Humble 2-16 | 20 | 1487 |
| **Ector County (Foster)—** | | |
| Broderick & Calvert, Inc., Foster 13 | 1451 | 4210 |
| Shell, Witcher 2-B | 591 | 4260 |
| Stanolind, Johnson 7 | 267 | 4228 |
| Sunray-York & Harper, Witcher 3 | 1207 | 4202 |
| **Ector County (Goldsmith)—** | | |
| American Maracaibo Co., Scharbauer 2-B | 1060 | 4173 |
| Continental, T. P. Land Trust 2-C-25 | 454 | 4290 |
| Gulf, Goldsmith 143 | 748 | 4257 |
| Shell, Scharbauer 8-A | 483 | 4211 |
| **Ector County (Jordan)—** | | |
| Shell, University 3-E | 2068 | 3636 |
| **Ector County (North Cowden)—** | | |
| Sinclair-Prairie, Corrigan 2 | 1148 | 4325 |
| **Gaines County (Wasson)—** | | |
| Amon Carter-Phillips, Wasson 2-A | 1471 | 4970 |
| **Howard County—** | | |
| Magnolia, Peerless-Chalk 1 | 1585 | 2895 |
| Shell, Snyder 1-A | 405 | 2880 |
| **Menard County (Wildcat)—** | | |
| Hagerty-Lee Pet. Corp., Jas. Callan 1 | * | 1270 |
| **Pecos County (Payton)—** | | |
| Kugle et al, Jackson 1 | 162 | 2073 |
| Sun & Atlantic, Payton 5 | 36 | 2157 |
| **Pecos County (Pecos Valley)—** | | |
| Peerless O&G Co., Pecos Valley Oil Co. 5-A | 333 | 1579 |
| **Pecos County (Yates)—** | | |
| Ohio, Yates G-1-3 | * | 450 |
| **Pecos County (Wildcat)—** | | |
| Cox & Moore, White-Baker 1 | * | 1805 |
| **Taylor County—** | | |
| Charter O&G Co.-A. R. Forester, Frederickson 3 | * | 2437 |
| S. B. Roberts-L. H. Choate, Lindsey 1 | 203 | 2377 |
| **Upton County (McCamey)—** | | |
| Basin Oil Properties, Baker-Conoco 6-A | 1137 | 2267 |
| Ursula Oil Co., King 4 | 20 | 2190 |
| **Ward County—** | | |
| R. A. Disney-Messenger, Allard-Amerada 1 | 121 | 2255 |
| Gulf, Estes 110 | 4661 | 2660 |
| Luse & Ice, Blair 5 | 360 | 2107 |
| Magnolia, Sealy 13-46 | 259 | 2847 |
| Texoil Prod., Inc., Allen 3 | 237 | 2100 |
| **Winkler County (Kermit)—** | | |
| Magnolia, Walton 202 | 1900 | 2928 |
| **Yoakum County (Bennett)—** | | |
| Honolulu Oil Corp.-Cascade, Bennett 5 | 1540 | 5262 |
| **Yoakum County (Wasson)—** | | |
| Continental, Stevens 2 | 1134 | 5046 |
| Murchison et al, Elliott 5-B | 1096 | 5130 |

*Failures; †Junked; ‡Million cu. ft. gas.

## *Much drilling in store for Wasson and Bennett*

**Midland, Texas.**—A major drilling program for the Wasson and Bennett fields, Yoakum County, and a second pipe line outlet will materialize shortly after the consummation of a deal now pending between The Texas Company and Aloco Oil Company, Dallas. Officials of the two concerns have agreed on the terms and contract is being drafted whereby Aloco Oil Company will acquire control of about 16,000 acres, including an estimated 6000 acres of virtually proven leases, with 16 completed wells, in the above two areas.

The deal is scheduled to be concluded by mid-January. In the meantime The Texas Company is proceeding with work on four offset locations contracted the past week, with provisions for Aloco Oil Company to take

over. Ten or more additional offsets are pending.

Aloco Oil Company is owned by officials of American Liberty Oil Company, owner of substantial production in the East Texas and Conroe fields and Southwest Texas. The latter discontinued the expansion of its operations some months ago, following the death of Dudley S. Golding, who was associated with Clint W. Murchison in building up the company's production, pipe line and crude marketing units. Toddie Lee Wynne is president of Aloco Oil Company, and Murchison is vice president.

Upon the delivery of the Yoakum County properties to Aloco Oil Company, The Texas Company is to be reimbursed $40,000 for each well, payable 50 percent on the date of the trade and the remainder at the end of one year. The purchaser is to proceed with the development, paying The Texas Company one fourth over-riding royalty on wells that produce in excess of 1600 barrels per month, and one eighth on wells that yield less than the above amount per month. When the properties have earned a gross return of $72,000 per well, The Texas Company holds option to participate on a 50-50 working basis, else on an adjusted over-riding royalty arrangement, according to reports.

Aloco Oil Company is reported to be negotiating with Atlantic Petroleum Purchasing Corporation, crude buying subsidiary of The Atlantic Refining Company, for the sale of a maximum of 5000 barrels of Yoakum County crude daily. This deal calls for the construction by the former of about 27 miles of 6-inch line to Hobbs, New Mexico, where connection can be made with Atlantic Pipe Line Company's trunk line to Atreco, near Beaumont.

The Texas Company's Yoakum County wells have a rated potential of 6500 barrels, with a base allowable of 1125 barrels daily. The 15 wells in the Wasson field are prorated to a base allowable of 70 barrels daily each.

Between 75 and 100 additional wells will be required of Aloco Oil Company in carrying out the terms of the deal within the next year or two.

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**Midland, Texas.**—The removal of 34 miles of 6-inch crude line built in 1928 by the Freeman W. Burford Interests from the Hendrick field to the West Texas Refining Company's refinery at Pecos, Texas, has been contracted by S. Blacky Caprito, Monohans, Texas, operator. Caprito purchased the line following the sale of the plant last September to a salvage concern.

## TEXAS PANHANDLE Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Carson County—** | | |
| Magnolia, Fee 47, lse 244 | 771 | 3050 |
| Northern Nat. Gas Co., Hodges 1 | ¶12.8 | 2945 |
| **Gray County—** | | |
| Cities Service, Hughey 17-B | 132 | 3193 |
| Magnolia, Fee 23, lse 227 | 482 | 2874 |
| Wilma Pet. Co., McKinney 3 | 874 | 3304 |
| **Hutchinson County—** | | |
| Dolomite Prod. Co., Perkins 4 | 702 | 3067 |
| Rieger et al, Groves 4 | 771 | 3250 |
| Hodges 4-B | 699 | 3063 |
| Simpson Oil Co., Terry 4 | 20 | 3087 |

*Failures; †Junked; ¶Million cu. ft. gas.

# North Texas Developments

***Cooke County Ellenberger wildcat rated 200 barrels daily. Baylor County wildcat has slight oil show with salt water.***

**Wichita Falls, Texas.**—Cooke County registered a new oil area the past week from the Ellenberger horizon when Whitfield, Pearson and Grimes' B. Voth 2 developed a natural flow estimated at 200 barrels daily from saturation at 1888-93 feet. Potential test was deferred pending the erection of 1500 barrels of lease tankage. It is located two miles south to west of the Muenster Townsite pool, which produces oil from the 1700-foot sand, and is 1650 feet from the north and 330 feet from the west lines of the Z. D. Fulton Survey, A-1250. The oil tests 40-gravity and is light green in color. Casing was cemented on gas sand logged at 1595-1607 feet. Top of the Ellenberger was called at 1785 feet.

An earlier test drilled by the partnership on the Voth land and about a half-mile to the northwest paved the way for the oil strike by showing oil with water in Ellenberger at 1883-84 feet after passing up oil and gas shows at 1816-20 feet and 1843-53 feet. Top of Ellenberger was logged at 1870 feet. Voth 1 was completed last July rated at 8,000,000 feet of gas, testing 800 pounds rock pressure, with an oil spray, after plugging back to 1812 feet.

The production performance of British-American Oil Producing Company's Baylor County wildcat on the F. C. Green land, C SW SE T&NO Section 215, 10 miles east of Seymour, failed to justify the extra effort expended in making a secret of the drilling information. This projected 5000-foot test on a geophysical prospect bailed one barrel of oil hourly from Canyon lime section near the 2600-foot level, and later was standing 750 feet with oil and a show of salt water. Seven-inch pipe was run after formation tester yielded oil and gas. A new location will be drilled in carrying out the deep-test obligation assumed in acquiring the large block while other companies were bidding for same.

Petroleum Producers Company and Continental Oil Company's Finkler 1, south offset to their Bend lime oil producer in the Asylum pool, southeastern Wichita County, logged oil show in lower Strawn sand at 4712-36 feet. Formation tester used at 4710-50 feet yielded 300 feet of oil and 800 feet of salt water in 23 minutes. Top of lime was called at 4185 feet, or about level with the discovery pumper which was completed at a plugged-back depth of 5375 feet. Finkler 1 will be deepened to the Bend lime section.

## NORTH TEXAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Archer County—** | | |
| Alliance Oil Co., Loftin 1, sec 1841 | * | 1002 |
| Burns et al, Wood 1, blk 5 (w) | * | 901 |
| Rathke Oil Co., Cowan 2, blk 8 | * | 1164 |
| **Clay County—** | | |
| Bridwell Oil Co., Thornberry 19, blk 5 | 197 | 1113 |
| Thornberry 20, blk 5 | 110 | 1110 |
| Thornberry 21, blk 5 | 91 | 1115 |
| Thornberry 22, blk 5 | 89 | 1100 |
| Thornberry 23, blk 5 | * | 400 |
| Gant et al, B. Edwards 1 (w) | * | 6354 |
| Gerard et al, Thornberry 8, blk 6 | 3 | 280 |
| Hart et al, T. P. Duncan 1, blk 15 | * | 1174 |
| Hudson et al, Big Wichita River 7 | 7 | 169 |
| Big Wichita River 8 | 25 | 332 |
| Big Wichita River 9 | 12 | 203 |
| Mayfield et al, H. Sanzenbacher 1, blk 42 (w) | * | 810 |
| Metzner & Burns, Thornberry 25, blk 11 | * | 1732 |
| L. Thornberry 12-A, blk 6 | * | 130 |
| Sussex Oil Corp., Shumake 16, blk 4 | 74 | 1155 |
| **Cooke County—** | | |
| Kingery Bros. et al, J. Weisman 2 | 45 | 919 |
| **Denton County—** | | |
| Bolivar Drl. Co., J. P. Knox 4 | * | 1689 |
| **Jack County—** | | |
| Hanlon-Buchanan, Ellis-Dubose 1 (w) | * | 1292 |
| W. B. Munson 1, sec 1 | * | 1477 |
| Royal Pet. Corp. A. B. Kuykendall 2 | * | 3130 |
| A. B. Kuykendall 3 | * | 3160 |
| Southern O&G Co., Eason 1 (w) | * | 4618 |
| Texas-Crusader Oil Co., Pigg Est. 1 (w) | * | 3601 |
| **Montague County—** | | |
| Donald & Coker, A. Durham 1 | * | 2000 |
| **Throckmorton County—** | | |
| Swain et al, McKelchan 1 | 10 | 733 |
| **Wichita County (K-M-A)—** | | |
| Board of Mineral Dev.-G&W Drl. Co., Big Wichita River 15 | 600 | 3800 |
| Bridwell Oil Co., Waggoner Bros. 8, blk 12 | 608 | 3876 |
| Burns et al, Mitchell 22, lot 7 | 960 | 3881 |
| Continental, Waggoner Bros. 3-B-A, sec 11 | 720 | 3774 |
| E. C. Oil Co., Burnside 1-A | 352 | 4060 |
| Fulwood et al, Waggoner Bros. 3, sec 13 | 500 | 3765 |
| Hanlon-Buchanan, Fassett-Tuttle 4-B | 1248 | 4013 |
| Hunter et al, Waggoner Bros. 44, sec 8 | 50 | 4052 |
| King Oil Co.-Perkins-Cullum, Pettit 9 | 696 | 3800 |
| Kouri et al, Martin 2-B, sec 36 | 704 | 3802 |
| Mitchell Oil Co., Mitchell 2, blk 10 | 664 | 3942 |
| Panhandle Ref. Co., Reilly-Griffin 5-A | 1464 | 3810 |
| **Wichita County—** | | |
| Bernhard et al, Shappell 3, blk 16 | * | 238 |
| Carter et al, Horn 1 | * | 1722 |
| Dorian & Mitchell, Mitchell 7 | 53 | 1616 |
| Mitchell 8 | * | 1700 |
| Fisher & Dudley, Warren 1 | 70 | 1380 |
| Hammon et al, Obenhaus 1, blk 275 (w) | * | 2505 |
| Houston Bros. et al, Oats 2 | 2 | 221 |
| **Young County—** | | |
| Atchley et al, Benson 12, sec 1392 | * | 961 |
| Collins et al, Young Co. Lumber Co. 1 | 6 | 626 |
| Fresno Oil Co., Prideaux 1 | * | 680 |
| Gooldy & McCollugh, Brogdon 1 | 306 | 4038 |
| Sparks et al, Campbell 6-A, sec 1389 | * | 910 |
| Strong et al, Grubbs 2, sec 638 | 1824 | 3884 |

*Failures; †Junked; ¶Million cu. ft. gas.

## *Cayuga hearing is postponed to January 10*

The Texas Railroad Commission has postponed until January 10 its hearing on the Cayuga field, which was scheduled for December 21. The delay was requested by producers in the field who asked for the original hearing.

The purpose of the meeting is to determine what disposition is to be made of Cayuga crude in the light of an announcement by the Tide Water Associated Oil Company that on January 1 it will cease to be a purchaser of crude in the field. Producers reported to the commission that they

were working out a plant and would need the additional time to consummate their negotiations.

J. R. Gahan, Tide Water Associated Oil Company vice president who came to Austin for the hearing, said he had no knowledge of these plans and could not tell whether the field would have to be shut down on January 1, or whether Tide Water would continue buying the oil until the hearing was held.

At an earlier meeting, following the statewide proration hearing in Austin producers asked that the field be closed down for 60 days unless Tide Water was willing to post a price in the field, even though it did not act as a purchaser of the crude which was to be produced and sold to the Pan American Company.

### *Texas sees 219 new wells start in week*

Permits for drilling 219 new wells in Texas were approved by the Texas Railroad Commission last week, 49 more than were allowed the week before.

Operators in the East Texas field were permitted to drill 22 new wells, including 18 in Gregg, three in Smith and one in Upshur County. Three locations were reported from the remainder of the East Central Texas area.

## EAST TEXAS

### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Joiner Area—** | | |
| Gulf, Alford 13 (157.05-ac) | 500 | 3755 |
| Humble, Box 25 (165.72-ac) | 8000 | 3709 |
| Fuller 17 (118.46-ac) | 9500 | 3657 |
| Silvey 63-A (460.56-ac) | 7600 | 3679 |
| Ohio, Griffin 21 (65.61-ac) | 500 | 3639 |
| Kangerga 11, lse 2 (65.56-ac) | 2400 | 3660 |
| Tide Water Associated, Flanagan 9 (40-ac) | 8000 | 3665 |
| **Kilgore Area—** | | |
| American Liberty, Christian 6-A (35.46-ac) | 5500 | 3676 |
| Byrd-Frost, Watson 5-A (22½-ac) | 5800 | 3585 |
| Watson-Hulsey 2-B (5-ac) | 8000 | 3672 |
| Estelle Oil Corp., I&GN 3 (1.6-ac) | 1500 | 3625 |
| Gulf, Reeves 16 (78.7-ac) | 6400 | 3578 |
| Lansberry, Rec., Money 11 (320-ac) | 2500 | 3721 |
| Nathan et al, Walker-Sun 1 (40-ac) | 1200 | 3602 |
| Overton Ref. Co., I&GN 21 (19.58-ac) | 500 | 3574 |
| **Longview Area—** | | |
| Coats et al (was Barnett), Bradshaw 4 | * | 3722 |
| Dean Bros. et al, Phillips 1 | † | 3679 |
| Harbour, Rec., Potter Bros., Smith Hrs. 1 | 4200 | 3622 |
| McCurdy et al, Richey 8 (14-ac) | 8000 | 3565 |
| Magnolia, Ziegler 24 (114.73-ac) | 6800 | 3500 |
| Shell, Moore 42 (303.7-ac) | 7000 | 3605 |
| Smith & Dorough, Clements 7 (30.95-ac) | 8500 | 3628 |
| Tide Water Associated, Sheppard 21 (114-ac) | 8200 | 3678 |
| **Cass (Rodessa)—** | | |
| Harry Hanbury et al, Davis 1, W. R. Meyers sur. | 450 | 5958 |
| **Marion (Jefferson-Rodessa)—** | | |
| Leon Dunn, Howard 1, Jno. Hanks sur | 400 | 6092 |
| Schlessinger 1, Jno. Hanks sur | 420 | 6046 |
| **Henderson County (Flag Lake)—** | | |
| Richards & Holloway, Tarkington 1-B (10-ac) | 311 | 3065 |
| Texas Co., Nolan 3 (280-ac) | 24 | 3044 |
| **WILDCATS** | | |
| **Henderson County—** | | |
| J. V. Scrivenor-A. V. Riley et al, Wm. Richardson 1 | * | 4590 |
| **Houston County—** | | |
| Wynne Drl. Co. et al, A. Price 1 (117-ac) | * | 6113 |
| **Kaufman County—** | | |
| W. S. McGee et al, Pritchett 1 | * | 3104 |

*Failures; †Junked; ¶Million cu. ft. gas.

# Southwest Texas Fields

***Agua Dulce test passes 13,431 feet, still in heaving shale. Alice field has important production extension indicated.***

**Corpus Christi.**—South Texas gained the deep well record for the United States east of the Rocky Mountains December 21 when Union Producing Company's Minnie Brown 1 passed the Fohs Oil Company's State Bay Baptiste 1, Terrebonne Parish, Louisiana. The Fohs well had been carried to 13,409 feet and was completed higher in the hole late this summer. The Union test on December 23 was going ahead below 13,431 feet and still was in heaving shale. California has one operation to just below 15,000 feet, deepest well ever drilled.

Minnie Brown 1, now second deepest penetration ever made, is of interest from several points. It topped the shale section around 8300 feet, which has been solid to its present depth. A string of 10-inch casing had been landed at 8007 feet, the remaining 5424 feet of hole being open. This probably is a record for all time for heaving shale operations. Likewise, the test is drilling a 9⅝-inch hole. It still is in the Hocklevensis zone which was topped at 8922 feet.

Another deep operation was being closely watched. Richardson Petroleum Company's T. M. Harrell 3, Block 33, in the heart of the Saxet field of Nueces County, was at 10,042 feet with 5-inch liner set on bottom. Perforations were made in the 10,000-foot sand, details being withheld, but it is known that the operation tested salt water. Pipe was squeezed for another test higher in the same sand. This well is 3 miles north and west of a test drilled on the Cain & Segrist lease by the same operation. This test blew out at 9927 feet and stuck drill pipe. It made a distillate producer through the drill stem to open the deepest pay in South Texas. Should the new well make a producer, it would indicate that much, if not all, of the Saxet field will produce at the lower depth.

#### Alice Extension

R. B. Bryant et al's S. E. Ingram 1, 3500 feet southwest of the Graham and Mosser production northeast of Alice, Jim Wells County, was coring in oil sand at 5155 feet. The formation was logged at 5122-55 feet, showing gas and distillate in the top and oil below. The well is one of the most important drilled since the new campaign commenced in this extension (or new field) area. It is one mile north of Callaway and Pan American Production Corporation's Cook lease production and indicates that all of this production will be tied into one pool. It is likely that it is a separate unit of the Alice structure.

Approximately ½ mile southeast of the Cook wells, Tom Graham's Hirsch 1, on a farm-out from Humble Oil & Refining Company, is flowing a large amount of distillate and gas after perforations were made at 4628-33 feet with 19 shots. The flow was through 3/32-inch choke with pressures 1150 pounds on tubing and 1750 pounds on casing. The test had been drilled to 5760 feet, but failed to find sufficient shows in the lower sands to warrant a production test. This completion further enhances the value of this reserve on the eastern side of the main pool.

La Gloria, southern Jim Wells County, was also holding considerable attention. Magnolia Petroleum Company's Maun 1, Block 10, La Gloria subdivision, cored gas and distillate sand at 5268-82 feet, sand with oil odor at 5287-5334 feet, distillate sand at 5528-40 feet and sand and shale at 5540-44 feet. The test drilled deeper, but is expected to plug back and complete to open a new oil field. Northeast of the town, Shell Petroleum Corporation's Von Blucher is tied up with a fishing job just below 7800 feet.

#### Complete Input Well

Corpus Christi Corporation has completed the gas input well for its repressuring project in connection with its natural gasoline plant in the Stratton field of Nueces County. The plant is scheduled to be in operation December 26. The input well cored sand at 6432-58 feet, drilled to 6465 feet, set liner on bottom and perforated the full sand section with 70 shots. It flowed about 250 barrels per day through ¼-inch choke with 2200 pounds tubing and 2650 pounds casing pressure. After flowing several days it is to be reversed and used for the input.

The Texas Company abandoned its deep test on Mustang Island after sticking drill stem. S. E. Little et al 1, about 854 feet from the Gulf of Mexico, drilled to 7746 feet, stuck drill stem apparently due to heavy water pressure. A sidetracking job was resorted to and the hole drilled to 7751 feet, pipe again sticking.

McCampbell field, San Patricio and Aransas counties, continues its boom with more than a score of active operations reported. Four more producers were added in the 7100-foot zone during the past week, all being rated at 450 to 500 barrels per day through 3/16-inch chokes.

Copano Oil Company defined the Tomoconnor field, Refugio County, on the south with O'Connor 43-B, which drilled to 6075 feet. On the extreme southwest side of the La Rosa field, also in this county, Hewitt & Dougherty's Rook 2 missed the regular 5900-foot pay, but was coring for the 6300-foot zone.

Calhoun County's first 10,000-foot test was not doing so well. Hiawatha Oil & Gas Company was waiting on cement after setting a plug in Roemer 2. The test had been carried to 10,015 feet, perforated a series of holes

at 8417-40 feet, 8225-57 feet, 1873-94 feet, 7829-50 feet. Each drill-stem test showed salt water or drilling mud with no oil, nor pressure.

### *Kelsey field probably large area in Brooks County*

**Mission.**—Defined to the west and southwest and further extended to the east, Kelsey field of Brooks and Jim Hogg counties now takes on the appearance of having most of its production in the former county. A large structure is indicated and from the performance of the first wells, it may be a highly important producing area.

Humble Oil & Refining Company's McGill Brothers 1, 4664 feet east of production cored oil sand 4697-4718 feet, cap to 4720 feet and sand and shale to 4728 feet, bottom of the hole. It flowed at the rate of 136 barrels per day through 3/16-inch choke under pressures of 300 pounds on tubing and 725 pounds on casing. Another location was active 1966 feet farther east. Humble Oil & Refining Company's Bass 4, 1860 feet west of the discovery, was abandoned at 4803 feet. Navarro Oil Company's Garza 1, 1½ miles southwest of production, was stopped at 5005 feet.

Farther south in the Sun pool of Starr County, Sun Oil Company has a Vicksburg sand producer, second for the pool. It is McKinney 2-A, which perforated at 5512-16 feet and was flowing into the pits.

### *Bastrop County wildcat abandoned in Georgetown*

**San Antonio.**—I. O. Brown and J. A. Campbell's hot prospect in Bastrop County failed to materialize and T. W. Bailey 1 has been abandoned in the Georgetown at 3315 feet. The test, located in the John Crutchfield Survey No. 12, was supported by a number of major and independent operators. Work in the sector indicated a fault of several hundred feet of displacement and a closure on the up-thrown side. Another test is contemplated.

The test topped the Austin chalk at 2728 feet, had the base at 3140 feet, Buda 3170 feet, Del Rio 3232 feet and Georgetown 3275 feet.

Dutch Wardlow and Magnolia Petroleum Company's test on the E. Standart Ranch, Kinney County and two miles south of Standart, has been completed as a fresh-water well after acidizing with 4000 gallons. The test is bottomed at 1402 feet in Edwards limestone. The well had several shows of oil in the black limestone above the Edwards limestone and appeared to have possibilities of opening a new pool.

### *Large gasser extends Rhode district production*

**Laredo.**—Loma Oil Company completed a large gasser to extend the Rhode district of McMullen County ½ mile to the south. The test is H. C. Edrington 1, NW W SW 79, and is in the Cole sand at 1800-20 feet, hole being 3 feet deeper in shale. It showed an open flow of 23,300,000 cubic feet with a rock pressure of 600 pounds. The test is about 1½ miles northeast of the Campana field's discovery well.

## SOUTH TEXAS
## Completions

### SAN ANTONIO DISTRICT

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Bexar County—** | | |
| Currie & Crowder, Miller 1, 8 mi ne San Antonio (wc) | * | 476 |
| Shoe String Oil, Kelso 1-A (Alta Vista) | 4 | 1040 |
| **Caldwell County—** | | |
| Elimag Oil, Pope 3 (Salt Flats) | 90 | 2727 |
| **Guadalupe County—** | | |
| Chiquita Oil, Malear 1 (Darst Creek) | 70 | 2613 |
| J. H. Oil, Roamel 1 (Darst Creek) | * | 2560 |
| **Kendall County —** | | |
| Dewey, Seidensticker 1, 3 mi ne Comfort (wc) | * | 545 |
| Carpenter, Seidensticker 1, 5 mi e Sisterdale (wc) | * | 571 |
| **Kinney County—** | | |
| Wardlow & Magnolia, Wardlow 1, 2 mi s Standart (wc) | * | 1042 |
| **Wilson County—** | | |
| Stapper Petroleum, McDaniel 1, 2½ mi se Poth (wc) | * | 3061 |

### CORPUS CHRISTI DISTRICT

| | | |
|---|---|---|
| **Aransas County—** | | |
| Shasta Oil, Duphorne & Crane 1 (McCampbell) | 1100 | 7246 |
| **Calhoun County—** | | |
| Humble Oil & Refining, Welder 19 (Heyser) | * | 5787 |
| **Goliad County—** | | |
| Brock, Dial 1, 8 mi w Goliad (wc) | * | 5050 |
| **Hidalgo County—** | | |
| Union Sulphur, Am. Rio Grande & Irr. 11 (Mercedes) | ¶3836 | 9618 |
| **Jackson County—** | | |
| Magnolia Petroleum, Drushel 4 (Cordelle) | 350 | 2692 |
| **Live Oak County—** | | |
| Southern Cross Oil, Taylor 1, 5 mi e Whitsett (wc) | * | 2504 |
| **Nueces County—** | | |
| Carlos Oil, Smith 2 (Turkey Creek) | 250 | 4072 |
| Corpus Christi Corporation, Wardner 7 (Stratton) | 350 | 6465 |
| Humble O&R, Michalek 1, 1½ mi n Bishop (wc) | * | 7316 |
| Killam, Ellick 11 (Clara Driscoll) | 428 | 5516 |
| Meyers 1 (Clara Driscoll), (old well drilled deeper) | 350 | 5938 |
| Sultex Oil, Scoggin 7 (Saxet) | 85 | 4554 |
| Sun Oil, McCann 7 (Luby) | 328 | 4354 |
| The Texas Co., Little 1, survey 59 (wc) | † | 7751 |
| **Refugio County—** | | |
| Copano Oil, O'Connor 27-B (Tomoconnor) | 1250 | 5924 |
| O'Connor 40-B (Tomoconnor) | 1300 | 5856 |
| O'Connor 43-B (Tomoconnor) | * | 6075 |
| Quintana Petoleum, O'Connor 36-C | 290 | 5925 |
| **San Patricio County—** | | |
| Graham Oil, Moore 1, McCampbell area (wc) | 1000 | 7175 |
| Grote & Corgey, Scrivner 1 (McCampbell) | 1000 | 7152 |
| Tedford 2 (3) (McCampbell) | 1000 | 7130 |
| **Victoria County—** | | |
| Barnsdall Oil, McFaddin 12 (McFaddin) | 400 | 4430 |

### LAREDO DISTRICT

| | | |
|---|---|---|
| **Duval County—** | | |
| Cox & Hamon & Gorman-Yoakam, Cuellar Bros. 14 (Hoffman) | 76 | 2822 |
| Cuellar Bros. 40 (Hoffman) | 65 | 2841 |
| Cuellar (Plymouth) 2 (Hoffman) | 72 | 2824 |
| Magnolia Petroleum, Duval County Ranch Co. 1 (101), 12 mi sw Freer (wc) | * | 2274 |
| Duval County Ranch Co. 13 (201) Eagle Hill | 65 | 1185 |
| Weil Estate 21 (Hoffman) | 35 | 2792 |
| Massingill & Moore, Duval County Ranch Co. 2 (59) (Lundell) | 200 | 1511 |
| Rowan & Hope & Hagan-Stewart, Cuellar 2-A (Eagle Hill) | 125 | 2705 |
| S. K. & C. Co., Welder 2, survey 103 (wc) | * | 3076 |
| **Jim Hogg County—** | | |
| Humble O&R, Kelsey Bass 4, Kelsey area (wc) | * | 4803 |
| Navarro Oil, Garza 1, Kelsey area (wc) | * | 5505 |
| **McMullen County—** | | |
| Ezzell, Fee 28 (Ezzell) | * | 1561 |
| Graham, Nueces L & L Co. 1 (Munson) | 150 | 1212 |
| Jones, Ezzell 51 (Ezzell) | * | 1544 |
| Loma Oil, Edrington 1, section 79 (wc) | ¶23 | 1823 |
| Wilkins, Rhode Ranch 1, section 27 (wc) | * | 2946 |
| **Star County—** | | |
| Senisa Oil, Salinas 3, Sacatosa area (wc) | * | 1794 |
| Zimmerman, Wood 1 (Ricaby) | 250 | 1736 |
| **Zapata County—** | | |
| Buffalo Oil, Lopez 4 (Mirando Valley) | * | 2751 |

*Failures; †Junked; ¶Million cu. ft. gas.


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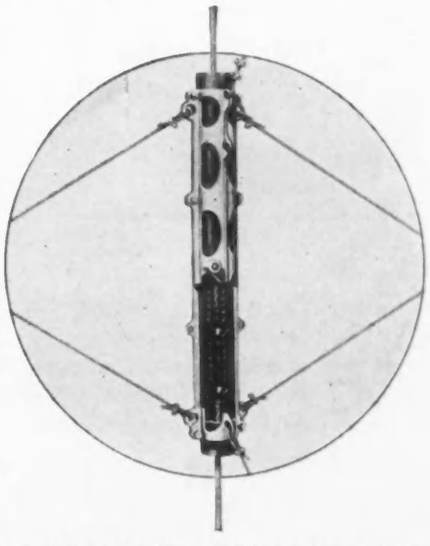

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# Texas Gulf Coast

***League City test has new sand; production extended west. Mt. Houston wildcat abandoned after extended testing.***

**Houston.**—A new deep oil sand was discovered at League City field, Galveston County, last week by Midstates Oil Company's Stewart 1-A, 950 feet east of the discovery well. After drilling to 9310 feet in salt water sand, 7-inch casing was set and perforated with 40 shots from 9294 to 9304 feet, and it came in flowing an estimated 27½ barrels per hour through a ⅛-inch choke. Tubing and casing pressure was 1500 pounds. Cores from 9250 to 9254 feet showed an odor of oil, from 9276 to 9305 feet was oil sand, and from 9305 to 9310 feet oil sand with salt water in bottom.

League City field was extended a half mile west last week by Geo. H. Echol's Stewart 1, Perry & Austin Survey. Casing was perforated from 8944 to 8967 feet and it came in flowing 8 barrels per hour of 50-gravity oil through a 7/64-inch choke. Casing pressure was 3100 pounds and tubing pressure 2725 pounds.

A mile northeast of the discovery well, Phillips Petroleum Company's Patton 1, was drilling in sandy shale at 8508 feet at the close of the week and has cored several gas sands.

Pierce Estate will test a new sand at McCroskey, Matagorda County, the coming week in Fee 6-A. Sand showing oil was cored from 7187 to 7197 feet. This sand was found some time ago when the hole was drilled to 7531 feet and an electrical log was run. The log showed sand from 7181 to 7191 feet. The hole was plugged back to 6517 feet and was cored down to 7218 feet. In the side-tracked hole oil sands were found at 7187 feet. Casing was perforated with 24 shots from 7191 to 7196 feet and the well was flowing into burning pits through a 10/64-inch choke and tubing pressure was 1825 pounds and casing pressure 2350 pounds.

The first well to produce from the 7700-foot horizon at Orchard, Ft. Bend County, is Gulf Oil Corporation's Moore 58. Other wells in the area have found this Yegua sand but have made tests either deeper or shallower than the 7700-foot sand. Moore 58 was drilled to 7753 feet and casing was perforated with 25 shots from 7693 to 7721 feet and came in flowing 44 barrels of high gravity distillate daily through a ¼-inch choke. Tubing pressure was 1975 pounds and casing pressure 2050 pounds.

North of Orange in Orange County, Sun Oil Company is taking Lutcher-Moore Lumber Company 1, B. Johnston Survey, deeper and was drilling in shale at 9414 feet after setting 7-inch at 9404 feet. An electrical log showed possible oil sands at 6320 to 6322 feet, 7160 feet, and 7849 to 7860 feet.

Northeast of production at Cheek, Jefferson County, Humble Oil & Refining Company is making a series of squeeze jobs on Jefferson Land Company 2 before making a production test. Last week casing was perforated from 7714 to 7716 feet with 6 shots and perforations were squeezed and retainer was set at 7697 feet and 125 sacks of cement pumped in. The retainer was drilled out and another set at 7695 feet and 55 sacks of cement was pumped into the hole. This cement has been drilled out and a production test is to be made the coming week.

Humble Oil & Refining Company has made location for E. K. Failor 1 at Cheek. It is 3750 feet southwest of the southwest corner along the southwest line, thence 466 feet northeast at right angles to the southwest line in the C. Hillebrandt Survey.

On the McFaddin Beach salt dome, offshore of Jefferson County, Humble Oil & Refining Company's McFaddin-State B-13, was drilling in shale last week at 5008 feet after coring salt water sands around 4908 feet.

Kirby Petroleum Company has made a wildcat location on the Cat Springs prospect in Austin County. Herring 1 is 990 feet from the southeast line and 330 feet from the northeast line of a 216-acre tract in the H&TC Section 171. The well is projected to the Cockfield sand.

### Mt. Houston Test Abandoned

In the Mt. Houston area, Harris County, Jack Frazier abandoned Griffith 1, A. Smith Survey, after failing to shut off the salt water flow. The wildcat indicated it would open a new oil field when production tests were made around 4073½ to 4077½ feet and from 4078 to 4118 feet. Each test showed oil and salt water. No announcement has been made for a new well in the area. It is generally believed that there is an oil field in the area and that Griffith 1 was on the flank of the structure.

North of Goose Creek and in the Cedar Bayou area, Harris County, C. D. Wheeler et al made location for Lewis G. Lobit 1, on a 77.62-acre tract in the D. McFadden Survey, Abstract 591.

About 3000 feet southwest of production at Eureka, Harris County, Tide Water Associated Oil Company is setting casing at 8650 feet in Roy 1, J. Rienerman Survey. Shows of oil were logged up the hole and probably the best show encountered was from 7947 to 7954 feet.

On the west side of Fairbanks field, Harris County, Amerada Petroleum Corporation and Stanolind Oil & Gas Company's Peters 2, W. K. Hamblin Survey, was perforated with 6 shots from 6966 to 6968 feet last week and in 1 hour flowed 11 barrels of fluid, 10 barrels being oil and 1 salt water. Tubing pressure was 1500 pounds and casing pressure 1200 pounds. The fluid was flowing through a ¼-inch choke.

Crown Central Petroleum Corporation has purchased the Eureka pipe line and is taking all the crude produced from the 18 wells in the field. The oil will be carried to the company's refinery on the Houston Ship Channel.

It was reported last week that Houston Oil Company purchased the Albert Plummer and Felmont Oil Corporation's holdings in the Spanish Camp area of Wharton County. No consideration was announced. The deal involved about 4000 acres and 6 gas wells. Houston Oil Company will lay a 12½-inch gas line from the field to its main line between Hungerford and Wharton.

Standard Oil Company of Texas is extending the Cedar Point field, Chambers County, southwest by State 4-118. The well cored oil and gas sands from 5925 to 5981 feet and set 7-inch casing at 5943 feet after coring ahead to 5985 feet. A production test will be made over the week-end.

In the Dacus area, Montgomery County, J. Smith et al's Scott 1, F. A. Wheeler Survey, was coring in broken formations last week with a slight odor of oil. The top of the odor was logged at 3617 feet and at the end of the week the hole was bottomed at 3623 feet.

On the north side of Hastings, Brazoria County, H. F. Alexander's Stiener-Blumer 2, H&TB Section 28, was abandoned last week after casing was perforated from 4600 to 4608 feet with 10 shots and a drill-stem test showed 47 thribbles of water.

## TEXAS GULF COAST
## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Anahuac—** | | |
| Humble, Broussard Hebert 16 | * | 7165 |
| **Brenham—** | | |
| C. H. Lane et al, Pompykal 3 | 5 | 205 |
| **Danbury—** | | |
| Rowan & Shell, Jamison 7 | 201 | 2201 |
| J. D. Nantz, Blakely-Winston 1 | 216 | 2134 |
| **Dickinson—** | | |
| F. W. Bennett, Gray 1 | ¶2 | 9021 |
| **Eureka—** | | |
| Jack Frazier, Helberg 1 | 649 | 8105 |
| **Fairbanks—** | | |
| Amerada-Stanolind, Ariola 1 | 30 | 6845 |
| Munger 2 | 192 | 6841 |
| Stinson 1 | 125 | 6856 |
| Bridwell Oil Co., Gibson 3 | 215 | 6841 |
| Noble & Baker, Hillegeist 3 | 165 | 6852 |
| **Friendswood—** | | |
| Humble, Beamer 25 | 634 | 6048 |
| **Hastings—** | | |
| H. F. Alexander, Stiener-Blumer 2 | * | 6223 |
| Stanolind, McDonald 3 | 484 | 6090 |
| Surface 9 | 624 | 5305 |
| **Orange—** | | |
| Bilbirth Oil Corp., McGill 1 | 273 | 5769 |
| Union Prod. Co., Lutcher Moore 3 | 251 | 5848 |
| **Orchard—** | | |
| Gulf, Moore 58 | 44 | 7752 |
| **South Cotton Lake—** | | |
| Humble, Casey 4 | 116 | 6489 |
| J. R. Turnbull, Casey 3 | 85 | 6496 |
| **Thompsons—** | | |
| Gulf, T. R. Booth X-15 | 319 | 3174 |
| **Van Vleck—** | | |
| Skelly, Metzger 3 | 375 | 8245 |
| **Withers—** | | |
| Smith & McDannald, Jordan 1 | 114 | 5542 |
| **Wildcats—** | | |
| Grey et al, Hughes 1, Fresno area, F. B. Drake sur | * | 6261 |
| Jack Frazier, Griffith 1, Mt. Houston area, A. Smith sur | * | 8350 |
| Texas Long Leaf Lumber Co., Thompson Lbr. Co. 1, nw Trinity, J. Ortego sur | * | 2565 |

*Failures; †Junked; ¶Million cu. ft. gas.

## *Big land-production deal rumored in Harris County*

**Houston.**—Negotiations are in progress, according to reliable sources, for the purchase of producing properties of West Production Company in several Harris County, Texas, fields, by Humble Oil & Refining Company. No deal has been made to date, but the companies are said to be trying to reach satisfactory terms.

# South Louisiana

***Avoyelles Parish wildcat reported finding markers high. Lake Mongoulois salt dome test indicates oil production.***

**Lake Charles.**—The most closely watched wildcat in South Louisiana is Sid Richardson's Haas Investment Company 1 on the Eola prospect in Avoyelles Parish. Last week the well was coring in shale below 7250 feet after logging sands with a show of oil in Cockfield formation from 6609 to 6620 feet. An electrical logging device showed 15 ohms. According to reports the well is running about 200 feet higher than other wells in the area. The hole will be cored down to the Sparta-Wilcox sand.

Lake Mongoulois salt dome, St. Martin Parish, definitely showed last week that it would produce. A drill-stem test was made from 9765 to 9775 feet in The Texas Company's State 6, 10-10s-9e, after casing was perforated with 35 holes. The testing tool was open 10 minutes and recovered dry gas and 10 gallons of distillate on bottom and a 2300-pound pressure. The perforations were squeezed with cement to shut off part of the gas. The well probably will be completed as a gas and distillate producer. Hole was drilled to 10,400 feet in salt, topped at 10,390 feet, then plugged back to 9740 feet and cement drilled out to 9780 feet.

The Texas Company is making another production test on LaTerre Land Company 1 at Golden Meadows, Lafourche Parish, after the well came in opening a new producing area. When the first production test was made at 8500 to 8520 feet the well came in flowing oil and salt water. The perforations were squeezed with cement and the casing perforated higher.

Sun Oil Company is preparing to drill another directional hole at Chacahoula, Lafourche Parish. Dibert, Stark & Brown 5 is 990 feet north and 1600 feet east of SWc 70-15s-15e, being 36 feet north of Dibert, Stark & Brown 2.

On the Port Allen prospect, West Baton Rouge Parish, Humble Oil & Refining Company announced location for a wildcat on the Mrs. Mary B. Levert tract, 1000 feet northwest of Batture and 1000 feet northeast of the southwest line of 5-8s-7e. Reports are that this will be a 7500-foot core test.

Across the Mississippi River and south of Baton Rouge, at Baton Rouge field, East Baton Rouge Parish, William Helis is preparing to complete Nelson 1 at 6480 feet in broken oil sands. Top of the oil show was logged at 6455 feet and 7-inch casing was set.

The Texas Company is still testing Wax Bayou 1 at Bateman Lake, St. Mary Parish. Last week the casing was perforated around 9750 feet with 30 holes and a drill-stem test showed 9700 feet of salt water, no oil or pressure. The perforations were squeezed with cement. A drill-stem test of perforations at 10,065 to 10,077 feet showed a 1600-pound pressure and 1828 feet of gas-cut mud, 156 feet of mud with trace of distillate. The deepest active drilling well in South Louisiana is The Texas Company's State Horseshoe Bayou 2 at Horseshoe Bayou, St. Mary Parish. The hole was down to 12,680 feet at the end of the week.

Shell Petroleum Corporation has completed Burdin A-1 at West Lake Verrett, St. Martin Parish, as a salt water disposal well. It was drilled to 2203 feet and 7-inch casing set on bottom and perforated with 60 holes from 2120 to 2140 feet. The well is taking about 400 barrels of salt water under 200 pounds pressure in 1½ hours.

Northeast of production at Lafitte, Jefferson Parish, The Texas Company's School Board 1, 16-17s-24e, was drilling in shale and lime at 10,612 feet at the close of the week and has evidently missed the producing sands. No shows of oil have been reported.

On the flank of New Iberia, Iberia Parish, The Texas Company has abandoned Consoulin et al 1, 13-12s-7e, at 9210 feet in salt after topping the formation at 9200 feet. Several slight shows of oil were cored up the hole.

South of Lake Charles, Humble Oil & Refining Company abandoned Knapp 1, 20-10s-8w, a core test, at 8000 feet. No information was given out on the core test.

The Atlantic Refining Company has made location for C. R. Klumpp 3 at North Tepetate, Acadia Parish. It is 990 feet west and 330 feet south of NEc 13-7s-2w. The operator's Klumpp 2 is flowing 160 barrels of 55.4 gravity distillate and 5,000,000 cubic feet of gas daily from a new sand at 8504 feet.

East of production at Bancroft, George E. Lilly's W. R. Rice 1, 15-6s-13w, flowed 22½ barrels of 43.3-gravity oil per hour last week through a ¼-inch choke from Cockfield sands at 7338 feet. Tubing pressure was 1400 pounds. Republic Production Company completed Columbia Land & Timber Company 2, 16-6s-13w, at 7300 feet. It flowed 15 barrels per hour through a 3/16-inch choke.

## SOUTH LOUISIANA
## Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Bancroft—** | | |
| George E. Lilley, Rice 1 | 652 | 7338 |
| Republic, Columbia L&T Co. 2 | 360 | 7300 |
| **Garden Island—** | | |
| Texas Co., State 30 | 516 | 6854 |
| **Gueydan—** | | |
| Burton-Sutton, Simon et al 1 | * | 8455 |
| **Jennings—** | | |
| L. & L. Oil Co., Houssiere Latrielle 4 | * | 1830 |
| Ladak Oil Co., J. Clement 8 | 100 | 1840 |
| **New Iberia—** | | |
| Texas Co., Consoulin 1 | * | 9210 |
| **North Tepetate—** | | |
| Atlantic, Klumpp 2 | 158 | 8504 |
| **West Lake Verrett—** | | |
| Shell, Burdin A-1 | * | 2203 |
| **Woodlawn—** | | |
| Union Sulphur, Recca 1 | 123 | 8914 |
| **Wildcats—** | | |
| Humble, Knapp 1, s of Lake Charles, 33-8s-1e, Calcasieu Parish | * | 8004 |
| Humble, Miller 1, Chalkley area, 32-11s-6w, Calcasieu Parish | * | 8684 |
| St. Mary Oil Co., Hebert 2, Charenton area, 31-13s-9e, St. Mary Parish | * | 6952 |

*Failures; †Junked; ¶Million cu. ft. gas.


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# North Louisiana Fields

***Failure marks northern limit of Shreveport production. Old Caddo field extension makes good flow from Tokio***

**Shreveport, Louisiana.**—With the northern limits of the Shreveport oil field definitely marked with abandonment last week of R. E. Allison's Jones-Mabry 1, SE SE 21-18n-14w, Caddo Parish, which showed salt water in basal Glen Rose lime, main interest in this area was focused on Harry Hanbury's Loe 1, SE SW 23-18n-14w, one and one-fourth miles northeast of production, which logged top of the Pettet (basal Glen Rose) lime at 5552.5 feet and penetrated four feet into the formation. The four feet of lime penetrated showed some oil saturation and casing will be set and test made, which if not productive will cause operator to core ahead cautiously to keep from running into the water level. Just as on top of anhydrite, this test checked three feet lower on top of the Pettet lime than the discovery well of the field in Section 27-18n-14w.

Abandonment of Allison's Jones-Mabry 1, which was one-half mile north of production, was the first definite abandonment in the field proper, although a test 1¼ miles south of production has shown salt water in the lime horizon but efforts are still being made to shut off water. No new locations for the field were announced last week. Two of the five other drilling operations in the field are below 5000 feet.

It is apparent that the oil producing zone in the basal Glen Rose lime is thin, the upper part of the lime formation being dry or carrying gas and distillate, with a thin zone carrying oil above the water level.

Most optimistic development of the week in North Louisiana was completion of a 432-barrel 43.7-gravity oil well in the Tokio horizon of the old Caddo field, 2½ miles north of production from this horizon in this field and ½ mile north of nearest production. The new well is Colonial Oil Corporation's Thigpen-Herold 1, NE SW 34-22n-16w, Caddo Parish, which after drilling to 4896 feet, plugged back to 2600 feet and had casing perforated with 32 shots from 2455 to 2465 feet in the Tokio horizon.

The 432-barrel daily production in this well was made through various sized chokes. Tubing pressure was 135 pounds and casing pressure, 650 pounds. The Tokio in the Caddo field proper has been lenticular and erratic. Present well is believed to be on a nose off the main structure and but little development is expected by any other operator in that area. Colonial Oil Corporation has about 2000 acres around the location which is about two miles southwest of the town of Vivian. However, it may cause a revival of interest in the Tokio horizon's producing possibilities in the Caddo field proper.

The Cotton Valley field, Webster Parish, North Louisiana's most active field, added four producers last week, three being gas-distillate wells in the lower Marine horizons below 8000 feet and one being from the Travis Peak (Holloway) sand at 5600-5900 feet. Considerable interest in that field was centered in Stanolind Oil & Gas Company's and H. L. Hunt's Pardee Coffee 1, NW NE 36-21n-10w, one location north of Stanolind's Pardee Company 1, SW NE 36-21n-10w, completed several months ago as the first crude oil producer from the Bodcaw or "E" sand of the lower Marine, it being well down on the southeast flank of the structure and more than one mile from nearest production. Present test with total depth of 8631 feet is preparing to test after drilling plugs in final casing string and after logging saturation in both the "D" and "E" sands of the lower Marine. Oliphant Oil Company's Stewart B-2, NW NW 4-20n-10w, on the southwest edge of production cored ahead at 8707 feet in the Bodcaw after making an unsuccessful test of that horizon.

Union Producing Company's Walker Unit 1, C 30-18n-8w, proposed 9000-foot test in the Sibley Glen Rose gas-distillate field was coring at 5857 feet after porous lime with a showing of gas was logged just above. United Carbon Company is leasing in township 17 north, range 16 west, Caddo Parish, east of the shallow Waskom gas field. Continental Oil Company is adding to its leases in township 12 north, range 6 east, Franklin Parish.

George E. Ellis of Beaumont, Texas, is assembling a block of acreage in west Sabine Parish between Blue Lake production in township 7 north, range 14 west, and the Sabine River, which is the state line, for a proposed 5000-foot test to spud by next February 15.

In view of discovery last week of the fourth Permian lime oil field on a geophysical prospect in Columbia County, Arkansas, early action is expected on Standard Oil Company of


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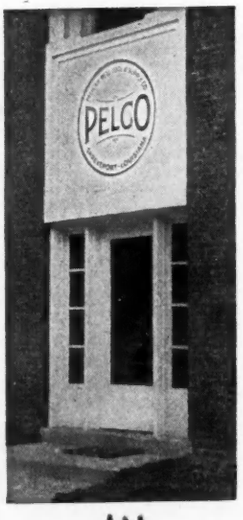


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SHREVEPORT LOUISIANA

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Cotton Valley—Greggton
Magnolia—Houston


## NORTH LOUISIANA Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Caddo (Pine Island)—** | | |
| Colonial Oil Corp., Thigpen-Herold 1, 34-22n-16w | 432 | 4894 |
| **Caddo (Shreveport)—** | | |
| R. E. Allison, Jones Mabry 1, 21-18n-14w . . . . . sw | | 5612 |
| **Red River (Bull Bayou)—** | | |
| Magnolia Pet. Co., Pugh 59, 12-12n-11w . . . . . * | | 6487 |
| **Webster (Cotton Valley)—** | | |
| H. L. Hunt, Davis 10, 13-21n-10w | 600 | 8325 |
| Babb 10, 14-21n-10w | 672 | 5690 |
| Ohio Oil Co., Bodcaw Lbr. Co. 51, Acct. 2, 13-21n-10w | 190 | 8619 |
| Stanolind O&G Co., Webster Inv. Co. 1, 35-21n-10w | 516 | 8316 |

*Failures; †Junked; ¶Million cu. ft. gas.

Louisiana's block centering around Section 14-23n-2w, Union Parish, where the Smackover lime would be expected to be picked up around 8200 feet. This is one of the blocks in the Buckner-Schuler "trend," west of the basement fault paralleling in a southeast-northwest direction the Monroe Uplift.

### *Mississippi lease requires early test*

**Jackson, Miss.**—Union Producing Company has acquired a 20,000-acre block of leases in townships 8 and 9 north, ranges 1 east and 1 west, Madison County, on which extensive geophysical exploration has been conducted, following assembly of the block by I. J. Brook of Houston, Texas. The leases are for 5 years and carry a drilling obligation to drill a 4500-foot test within 6 months. James and associates of El Dorado, Arkansas, have several hundred acres in the same vicinity.

Location of geophysical units in central and south Mississippi, last were: Amite County—Sun Oil Company, gravimeter unit; The California Company, gravimeter unit; Lauderdale and Newton counties—Union Producing Company, reflection seismograph unit; Forrest County—Sun Oil Company, torsion balance unit; Jackson County—Ohio Oil Company, torsion balance unit; Wilkinson County—Barnsdall Oil Company, reflection seismograph unit.

J. C. Shepherd has assembled a block of over 25,000 acres in townships 15, 16 and 17 south, ranges 10, 11, and 12 west, in Fayette County, northwest Alabama, centering around a test drilled in 1911 in Section 21-16s-11w. The old abandoned test, which was shallow in depth, is reported to have been seeping some oil and gas recently. This test showed considerable gas when drilled.

### *Six Arkansas permits*

**El Dorado, Ark.**—Six drilling permits were authorized last week by the Arkansas Board of Conservation, as follows: Columbia County—Standard Oil Company of Louisiana, S. T. Crone 3, located 660 east and 560 north of SWc NE SW 8-16-22; A. Lewis 1, located 660 north and west SEc NW NE 16-17-19; Miller County—F. & H. Oil Company, Fred Watson 1, located 660 west and 330 north SEc South half NW SE 2-20-28; F. W. Martin and Company, Bloomburg Bank 1, located 670 east and 330 north SWc SE NE 2-20-28; T. C. Watts B-1, located 330 north and 660 east SWc NW NW 1-20-28; Union County—J. R. Lockhart, Nonie Jerry 1, located 330 south and east NWc SE SE 12-17-14.

## Arkansas Fields

### *Columbia County new strike makes 37 barrels per hour*

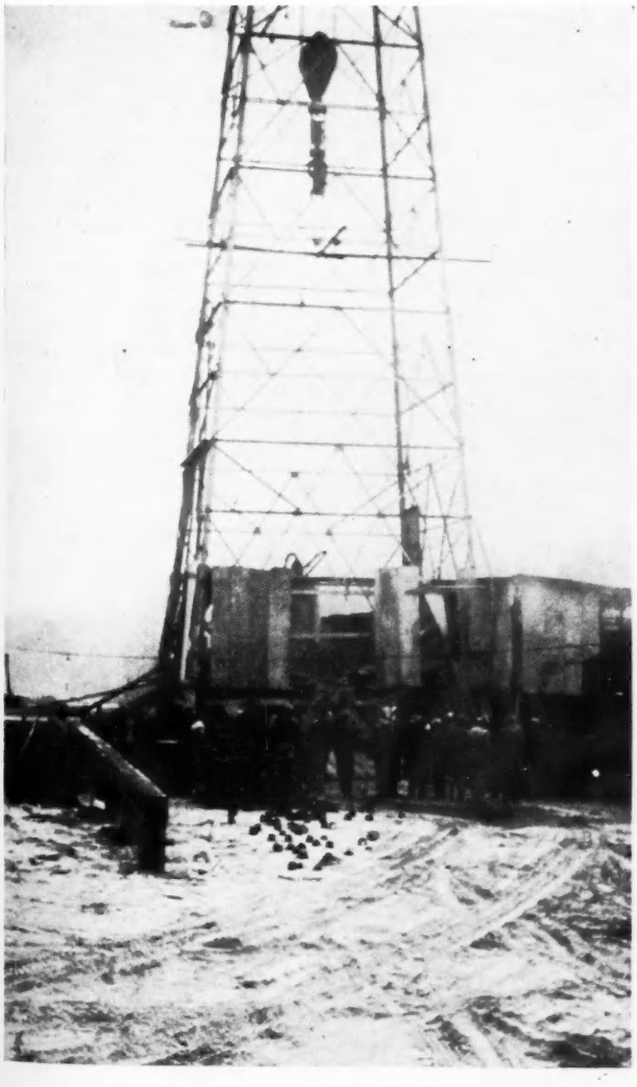
**El Dorado, Arkansas.**—Renewed activity in the Buckner-Schuler "trend" in south Arkansas was reflected last week as a sequel to completion late the week before of Tide Water Associated Oil Company and Seaboard Oil Corporation's J. T. Beene 1, SE NW 15-18s-19w, Columbia County, as the fourth Permian lime oil field on a geophysical prospect in Columbia County since November, 1937, when Buckner was discovered.

Tide Water-Seaboard's well last week on a 16/64-inch tubing choke averaged 37.20 barrels per hour with a gas/oil ratio of 774 to 1, showing 1900 pounds casing pressure and tubing pressure of 1575 pounds. Flowing through 13/64-

## ARKANSAS Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Columbia (Wildcat)—** | | |
| Tidewater Associated & Seaboard, J. T. Beene 1, 15-18s-19w ..... | 892 | 8332 |

*Failures; †Junked; ¶Million cu. ft. gas.



**These two pictures were taken at the time of completion of Tide Water Associated Oil Company's and Seaboard Oil Corporation's J. T. Beene 1, Section 15-18s-19w, which opened a new Permian lime oil field in Columbia County, Arkansas, on December 16, 1938. The group includes Tide Water Associated Oil Company district officials, reading from left to right: Garl A. (Gus) Schmidt, geologist; Weldon E. Cartwright, geologist; Ira Jared, Sun Oil Company scout; Mrs. Eugene Morehead and Mr. Morehead, the latter land man for the discoverer. The pictures were taken by Jack Creswell, Tide Water scout, and are reproduced here through his courtesy.**

inch choke the well averaged 22.95 barrels per hour with a gas/oil ratio of 713 to 1. Gravity was 44.6 Beaume, corrected. On a 24-hour gauge through one-eighth inch tubing choke the well made 204 barrels, tubing pressure being 1650 pounds and casing pressure, 1900 pounds. The well had 26 feet of saturated Permian lime from 8203 to 8227 feet. Total depth is 8332 feet, at which latter point the water level was definitely established.

The new well is near the villages of Atlanta and Emerson and is five miles south of the Permian lime field at Village. Standard Oil Company of Louisiana, which discovered Buckner and Village, has been the largest buyer of available acreage around the Tide Water-Seaboard well. H. L. Hunt also has been buying there. Standard Oil Company of Louisiana is adding to its geophysical block that centers around Section 32-17-18, Columbia County.

Tide Water Associated Oil Company is expected to start operations soon after January 1 on a block of acreage it has under lease around Section 23-15-19, Ouachita County, with Grady Vaughn as drilling contractor. Fohs Oil Company will also drill another test soon on its block around Section 5-18s-14w, Union County, where it recently abandoned a Permian lime test that showed sweet oil but also carried salt water.

### *Schuler allowable set at 15,000 barrels*

**El Dorado, Arkansas.**—The Arkansas Board of Conservation has set the allowable for the Jones sand (lower Marine) in the Schuler field, Union County, at 15,000 barrels for January, based on a contemplated total of 122 wells producing from that sand by January 1. The allowable is the same total as for December. The allowable for Reynolds (Permian) lime wells of the same field was left at 2000 barrels, with twelve wells expected to be producing from that horizon by January 1.

The 73 upper Gloyd oil wells of the Miller County, Arkansas, part of Rodessa were left unprorated but a January allowable of 4000 barrels was set for 33 wells producing from the lower Gloyd. Buckner's per well allowable was left at 200 barrels daily despite a request of the company owning all the nine producers there to cut it to 175 barrels. The Magnolia (Kerr-Lynn) field's 250 barrel daily allowable was continued in effect in January. Village's allowable will be set after a series of tests by the conservation board's engineers.

### *Arkansas may require meters on pipe lines*

**El Dorado, Arkansas.**—Feasibility of requiring meters to be installed on all pipe lines from Arkansas oil fields will be determined after a hearing by the Arkansas Board of Conservation called for December 29 at 10 a.m. in El Dorado. The hearing was called last week after forty-eight royalty owners in the Schuler field, Union County, petitioned the board to require such meters in that field intimating that all oil leaving that field is not being properly accounted for.

# New Mexico Fields

***Lease expiration stops Lovington wildcat without decision. Vacuum is busy spot though some needed offsets delayed.***

**Hobbs, New Mexico.**—Leave expiration temporarily eliminated one of the 5 wildcats seeking oil production on the Lovington structure, east central Lea County, before a decisive test in the big lime section was possible. Barnsdall Oil Company's State-Humble 1, C NE SE 33-16s-36e, 3 miles northwest of the discovery gasser in the Yates horizon, was halted at 5000 feet because of lease contract being terminated on December 17. An unsuccessful effort was made at 4978 feet to develop oil or gas production from oil stained lime, topped at 4860 feet, with an elevation of 3902 feet. The prolific gas found by the discovery well in the upper horizon was either absent, or mudded off.

Stanolind Oil & Gas Company's State 1, C SW SE 1-17s-36e, approximate north offset to the gasser, blew out at 3906 feet, rated at from 20,000,000 to 30,000,000 feet of dry gas daily. The flow was under control, as a string of 9⅝-inch pipe was cemented at 3102 feet in anticipation of troublesome gas in the Yates and brown lime. Contractor was mixing mud late last week to mud off the production, and resume drilling. Amerada Petroleum Corporation's State 1-A-L, west offset, cemented 7⅝-inch pipe at 3459 feet, with left-hand nipple installed about 500 feet above the casing seat. The upper section will be unscrewed and removed after the 5½-inch oil string is landed. Repollo Oil Company's State 1-182, SW SE SW 31-16s-37e, 1½ miles northeast of the above operations, was drilling below surface pipe.

Skelly Oil Company's State 1-N, two miles due north of the first gasser, was drilling at 4250 feet, having logged top of the brown lime 3259 feet, or 590 feet above sea level. It is 20 feet lower structurally than the gasser, while Barnsdall Oil Company's test was between 50 and 60 feet lower on this marker than the gas well.

Lea County's heavy quota of completions the past week reflects the increased drilling activity launched in October and November. The number will remain above normal for several weeks hence. The county gained 8 new operations the past week, with the Vacuum field accounting for 50 percent of the total.

The mid-month proration schedule released by C. G. Staley, umpire, credits the state with an allowable of 98,285 barrels daily. The production allocation to prorated wells in Lea and Eddy Counties was cut one barrel for the December 16-31 period to provide for new completions, making the new allowable 49 barrels and 42 barrels per well daily, respectively.

Actual production in Lea County areas during the past three months has been considerably below the authorized allowable due to pipe line companies lagging behind on crude runs, and the failure of the wells to produce their quota in some of the fields. During October the 18 areas in Lea County recorded a net shortage of 181,728 barrels, or an average of 5862 barrels daily. Pipe line proration was put into effect in the Vacuum field, effective October 1, and the field contributed a shortage of 27,720 barrels for the month. The Penrose sandy-lime field registered the biggest shortage in showing a deficit of 37,017 barrels. Monument field lacked 21,204 barrels of making its allowable, while the Eunice field was short 21,360 barrels for the month.

The practice of allocating the top allowable to wells that are not capable of producing their quota involves a financial sacrifice of considerable proportions to the owners of non-marginal producers and to the state in the form of royalties and taxes. That portion of the state's allowable currently assigned to wells that can not produce their quota is adequate to permit an upward revision of the production of the prolific wells, according to observers. Umpire Staley has repeatedly sought the aid of operators in declaring wells that are incapable of making the top allowable. Those ignoring the plea are said to be contemplating workover operations that would in all probabilities restore production to the top allowable, but re-conditioning work is being deferred.

#### Vacuum Active

Vacuum field is one of the most active drilling centers in the Permian basin, and has been setting the pace in New Mexico for some months. It is credited with 34 operations, including 27 drilling tests. Some of the largest lease owners are lagging behind in taking care of direct offsets, otherwise a larger development program would be underway. Two new projects authorized by Phillips Petroleum Com-

## NEW MEXICO Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Eddy County—** | | |
| Carper Drl. Co. et al, Day 1, ne ne ne 3-19s-31e | 55 | 2748 |
| C. J. Frederick et al, Reed 1, c ne sw 28-24s-28e | * | 2770 |
| Fullerton Oil Co., Johnson 3-A, c nw sw 36-16s-31e | 156 | 4259 |
| **Lea County (Eunice)—** | | |
| L. E. Elliott-H. J. Schafer, State 1-A, c e½ nw ne 26-20s-36e | 5 | 3865 |
| Gulf, Mattern 1-F, c nw ne 1-22s-36e | 125 | 3805 |
| State-Arnott-Ramsey 2-D, c ne ne 33-21s-36e | 231 | 3885 |
| Ohio, C. J. Saunders 2, c nw nw 1-22s-36e | 900 | 3850 |
| **Lea County (Hardy)—** | | |
| Magnolia et al, Hardy 3, c ne nw 29-21s-37e | 120 | 3810 |
| Stanolind, Hill 4-C, lot 6, 5-21s-37e | 120 | 3780 |
| **Lea County (Mattix)—** | | |
| Schermerhorn Oil Corp., Woolworth 3, nw nw se 28-24s-37e | 400 | 3536 |
| **Lea County (Penrose)—** | | |
| Shell, Grizzell 4, c sw se 8-22s-37e | 750 | 3712 |
| **Lea County (Skelly)—** | | |
| Skelly Oil Co., H. O. Sims 4, c nw nw 3-23s-37e | 328 | 3622 |
| **Lea County (Vacuum)—** | | |
| Amerada, State 5-V-A, c nw sw 22-17s-35e | 150 | 4662 |
| Phillips Pet. Co., State-Hale 2, c ne sw 35-17s-34e | 600 | 4655 |
| Shell, State 2-B, c ne se 30-17s-35e | 392 | 4735 |
| State 1-N, c nw ne 28-17s-35e | 168 | 4710 |
| State 1-O, c se ne 34-17s-34e | 125 | 4785 |

*Failures; †Junked; ¶Million cu. ft. gas.

pany involve the drilling of State-Santa Fe 21, C NE NE 33-17s-35e, and State-Santa Fe 22, C NW SW 26-17s-35e. Drilling & Exploration Company, Inc.'s State 1-B, c s½ se nw 22-17s-35e, is on a farmout by the Corona Petroleum Company, and is a northeast outpost.

Continental Oil Company awarded contracts for the drilling of 3 Lea County offsets the past week, including State 4-H-35, C SE NW 35-17s-34e, Vacuum field. The company has derrick up for State 4-J-2, C NE NE 2-22s-36e, situated in the prolific oil area between the Eunice and Penrose fields, and work is underway on Sanderson 1-B-14, C N½ NW NW 14-20s-36e, southwest edge of the Monument area.

In the Mattix field, R. Olsen et al are starting operations on E. E. Blinebry 1, C SW SW 29-23s-37e, situated on a lease farmed out by The Texas Company. Schermerhorn Oil Corporation's Woolworth 4, C NE SE 28-24s-37e, is also a new test for the area.

Minor oil saturation passed up by Shell Petroleum Corporation's Harwood 1, located on the Milne sand geophysical prospect, Roosevelt County, is to be acidized. This structurally high wildcat was drilled to 5151 feet, or 951 feet sub sea, and has plugged back 4600 feet to land 7⅝-inch pipe at 4050 feet. Regardless of the final outcome of this wildcat one or more tests will be drilled on the large structure.

### *Appalachian reserves of gas sufficient for 17 years*

Known natural gas reserves in the Appalachian area will be adequate for an additional 17 years, E. E. Roth, geologist for the Columbia Gas & Electric Corporation, told the West Virginia public service commission last week. Roth testified in a rate investigation of the Cumberland & Allegheny Gas Company.

The Cumberland company's holdings in the Appalachian region—described as fields in Ohio, Pennsylvania, New York, Kentucky and West Virginia—amount to about 19,684,000 M.C.W., Roth said, sufficient to serve the company's needs at the present rate of consumption for 25 years.

## MOUNTAIN STATES Completions

**COLORADO**

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Routt County (Steamboat Springs Anticline)—** | | |
| Steamboat Springs Syndicate, Brown 1, nw ne 1-6n-86w | * | 1775 |
| **MONTANA** | | |
| **Glacier County (Cut Bank Field)—** | | |
| Yukon Oil Co.'s Lungren 1, sec se sw 23-37n-5w | 100 | 2560 |
| **Toole County (Kevin-Sunburst Field)—** | | |
| Big West Oil Co., Engle 4, sw sw sw 1-33n-3w | 15 | 2920 |
| **WYOMING** | | |
| **Converse County (Shawnee Field)—** | | |
| Wyoming Southern Oil Co., Winder 1, sw ne nw 6-31n-69w | * | 289 |
| Wyore Oil Co., Nieman 1, ne nw ne 12-31n-70w | ¶1 | 212 |
| **Big Horn County (Five Mile Dome)—** | | |
| Valentine Kirk, Frisby 1 csw se 11-49n-94w | * | 1285 |
| **Weston County (Osage Field)—** | | |
| F. G. Dilger, Trustee 16, sw sw ne 30-46n-63w | 35 | 1435 |
| George Keisling, Guyer 1, se se sw 26-46n-64w | 50 | 1988 |

*Failures; †Junked; ¶Million cu. ft. gas.

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**SALE OF OIL AND GAS LEASE—United States Department of the Interior, General Land Office, Washington, D. C. Notice is hereby given that the NE¼ NE¼ Sec. 13, and the NW¼ NE¼ Sec. 25, T. 21 N., R. 10 W., La. M., 80 acres in the Cotton Valley oil and gas field, Webster Parish, Louisiana, is offered to the responsible qualified bidder of the highest bonus per acre under section 17 of the leasing act of February 25, 1920 (41 Stat. 437), as amended by the act of August 21, 1935 (49 Stat. 674), at the royalty rate scale in the lease form shown in circular 1386, at the sale to be held in the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 10:00 o'clock A. M., on January 5, 1939. The successful bidder must deposit on the day of the sale a certified check on a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease, required by section seven of General Land Office circular 1386. The remaining four-fifths, together with the annual rental in advance at the rate of $1.00 per acre, must be paid prior to the issuance of a lease. The bidders are warned against violation of the provisions of section 59 of the United States Criminal Code, approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders. The right is reserved to reject any and all bids at the discretion of the Secretary of the Interior.**

**FRED W. JOHNSON, Commissioner.**

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**WALTER O'BANNON COMPANY**

**TULSA, OKLAHOMA**


# Michigan Fields

## *Columbia Township pool extended two miles west*

**Mt. Pleasant, Mich.**—Possibility of a two-mile west extension of the new Columbia Township pool, Van Buren County, loomed this week when Aldero Oil Company swabbed from 8 to 14 barrels per day from Traverse limestone at 1179 feet on Crouse 1, Section 9-1s-15w.

The test is two miles west of recently opened production in Columbia Township, which itself lays about four miles west of the Bloomingdale townsite pool. Operators plan to acidize or shoot before final completion. The pay is from 7 feet in the Traverse lime. Three commercial wells previously were completed in the Columbia pool proving up an estimated 100 to 300 acres.

Tuscola County is expected to receive more attention as a result of completion by Smith Petroleum Company of a west offset to the discovery and recording higher initial production than the first well. Smith's Childs 1, NE NE NE, Section 25-14n-7e, Akron Township, bottomed at 3477 feet and is flowing between 60 and 90 barrels daily from the Monroe. First pay was checked at 3412 feet.

The discovery is producing from 3426 feet between 35 and 45 barrels daily. It was completed early this year as the first Michigan well to produce from a deep zone in the Monroe limestone. Top of this formation comes in around 2920-35 feet. Other fields in Michigan producing from the Monroe pay from 2 to 10 feet in.

Weber Oil Company resumed drilling on Floeter 1, Section 31-25n-1w, Crawford County, after a 14-day shut down, but when 40 feet in the Dundee had failed to log any new pay. At the shut down point, 2978 feet (top 2976) oil showed on bailer tests.

Verona Crude Oil Company is plugging back to 2885 feet to shoot a saturation zone in the Niagara limestone logged at 2847 feet. After logging the show the test was drilled to 2915 feet but failed to show another pay.

A half-mile west extension of the Pure-Switzer area of the Freeman-Redding pool in Clare County was established this week when Talbot Oil Company's State 1, Section 28-19n-6w, Redding, filled and flowed 35 barrels on a 2-hour test at 3882 feet, 16 feet in the formation.

Production in this district, currently is under a 125-barrel-per-well proration (voluntary) schedule but will be cut back to 90 barrels at week-end.

## MICHIGAN Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Allegan County—** | | |
| C. S. Allender, Sebright 1, nw sw nw 21-4n-13w | 100 | 1596 |
| Haynes Oil Co., Morgan 1, se nw se 29-1n-13w | * | 1300 |
| **Berrien County—** | | |
| Sprenger Brothers, Bihlmire 1, 35-3s-17w | * | 990 |
| **Clare County—** | | |
| C. L. Maguire, Barlow 2, nw nw se 3-18n-6w | 500 | 3885 |
| Basin Oil Co., Van Horn 1, nw ne ne 4-18n-6w | 1600 | 3889 |
| Talbot Oil Co., Redding A-1, c s se sw 28-19n-6w | 380 | 3882 |
| Pure Oil Co., Douglas 1, sw ne sw 34-19n-6w | 190 | 3931 |
| **Gladwin County—** | | |
| Bridger Basin, State 1, 29-19n-2e | * | 3335 |
| **Gratiot County—** | | |
| H. R. Fothergill, Blanchard 1, c se nw 11-10n-4w | ¶¼ | 980 |
| **Midland County—** | | |
| Weller & Dapars, Hepinstall 1, sw sw ne 9-13n-2e | * | 3679 |
| **Osceola County—** | | |
| Franklin Pet. Co., Johnson 1, se ne sw 26-19n-7w | * | 4147 |
| **Tuscola County—** | | |
| Smith Pet. Co., Childs 1, ne ne ne 25-14n-7e | 80 | 3477 |
| **Van Buren County—** | | |
| Gem Oil Co., Albright 1, sw ne nw 13-4s-14w | * | 1300 |
| Fisher & McCall, Percel 1, se sw nw 16-1s-14w | * | 1265 |
| Wiggins C1, nw nw nw 16-1s-14w | 75 | 1206 |
| White et al, Lumber Co. 1, se se ne 17-1s-14w | 500 | 1210 |
| Wiser Oil Co., Boyers 3, se nw ne 17-1s-14w | 1090 | 1226 |
| Vanco Oil Co., Meek 2, nw se ne 17-1s-14w | 600 | 1219 |
| D. F. Jone, Meldin 2, nw ne ne 17-1s-14w | 900 | 1217 |
| Burr Oil Co., Sarrosy 1, se se nw 17-1s-14w | 125 | 1235 |
| Rex Oil Co., Foster 1, nw sw ne 11-1s-15w | 80 | 1172 |
| Lacota Oil Co., Bidenkopf 1, nw sw se 2-1s-16w | * | 1100 |
| Underwood Oil Co., Tolles 1, se sw ne 15-1s-16w | * | 1082 |
| Tuss et al, Wilcox 1, nw sw se 8-2s-14w | * | 1300 |

*Failures; †Junked; ¶Million cu. ft. gas.

## *New book entitled "The Birth of Oil Industry"*

Based upon new and fresh sources, "The Birth of the Oil Industry" presents a well-rounded story of the origin and development of the petroleum industry in western Pennsylvania up to 1870.

Beginning with Father de la Roche D'Allion's observation of petroleum in 1627, it describes the early petroleum springs and wells in western New York, northwestern Pennsylvania, West Virginia, Kentucky and Ohio; the use of "Seneca Oil," as it was called, for all sorts of ailments, until its value as an illuminating and lubricating oil was gradually realized; the beginnings of the kerosene industry in the United States; the formation of the first joint stock petroleum companies; and the drilling in 1859 of Colonel E. L. Drake's famous well.

The mad rush for land which followed is described in detail by the author, as is the frantic speculation along Oil Creek; the great flowing wells of 1861 to 1864; modes of transporting oil to market; the development of home and foreign markets; the establishment of refineries; federal taxation of the new industry and its effects; the whirlwind rise of Pithole City from a spot in the wilderness to a city of 10,000 to 15,000 in about three months; the wild battles between teamsters and oil men that followed the laying of the first pipe lines; the depression which struck the industry in 1866 when the oil bubble burst; and the cultural growth of the oil towns.

The story is a blend of dramatic detail and carefully documented Americana.

The author, Paul H. Giddens, is Professor of History and Political Science at Allegheny College.

# California Fields

***Second Coalinga Nose well rated at 60,000 barrels daily. Standard Oil Company has many active tests in Valley.***

**Los Angeles.**—Completion of a second "60,000-barrel well" at Coalinga Nose serves further to enhance the possibilities of heavy production from this spot in the San Joaquin Valley. Superior Oil Company's Coalinga Fee 2, Section 7-20-16, completed last week, was rated the same as Robert Lytle's No. 31-18F, Section 18-20-16, which three weeks ago was good for 60,000 barrels initial from a sand section 505 feet thick which was drilled to 7960 feet. The second completion is from the same sand depth.

Evidently it is by agreement that the operators have set the maximum capacity of these wells at 60,000 barrels daily. Under the regulations of the Central Committee of California Oil Producers, any well is expected to be choked back to 300 barrels daily in order to observe conservation practices and neither well has been opened for full test. But operators are agreed that the sand found at Coalinga Nose is one of the most prolific in the world, and that other wells, equally as big, will be brought in.

Superior Oil Company's Cagle 1, Section 6-20-16, at Coalinga Nose, is drilling below 6100 feet. The Eocene has yet to be tapped in this deep venture and its completion would extend the field. Standard Oil Company's No. 1-17F, Section 17-20-16, is coring below 7100 feet in shale, and Tide Water Associated Oil Company's Fleishaker 57-1, Section 1-19-15, is drilling and coring below 7300 feet in shale and sand.

Although there has been a tendency to cut down drilling operations in the San Joaquin Valley, a resume finds that Standard Oil Company is a leading contender for the number of active projects. This company is drilling two wells at Kettleman Hills North Dome, setting boilers for a third, and a fourth project is expected to spud soon. At Greeley field, the company is working on five wells and two in the Wasco field. Other activities of the company take in Coalinga Nose, Canal, and the Midway-Sunset field, and a crew is rigging up a test for the McKittrick district and preparing foundation for another project. At Torrance, in the Los Angeles Basin, the company is completing a well and drilling four in the West Montebello extension. An interesting angle about one of the wells at Greeley is that it is located off the trend of production, being 1½ miles southwest of the discovery well.

Argo Petroleum Corporation's outpost test situated in Section 11-26-20, between Lost Hills extension and Lost Hills proper, started flowing one day last week although it had been suspended for a few weeks. Farnsworth 1A had never been on production at a depth of 1289 feet. It was cleaned out but heaving shale interfered with operations and the crew let it stand. Now that it is flowing, additional work is slated. Time Petroleum Company offsets Farnsworth 1A, with Lincoln 1 in Section 12.

Due south of its discovery well in the Wasco field, Continental Oil Company has spudded KCL A-4-8. Standard Oil Company abandoned a deep hole in this field a few weeks ago but staked location for a second project in the same section. Continental Oil Company has abandoned Newhall 1, a wildcat situated east of Fillmore, Los Angeles County. This venture was drilled on a large block eight miles northwest of Barnsdall Oil Company's Rancho San Francisco field at Newhall.

Having cored into a hard shale formation and failing to encounter showings of importance, W. E. Entrikin's D-1 wildcat situated on the Athens Golf Club course in the Los Angeles Basin may be slated for abandonment. An electric logging device will be run for a final checking. The Maxwell zone was found to be barren at 5622 feet.

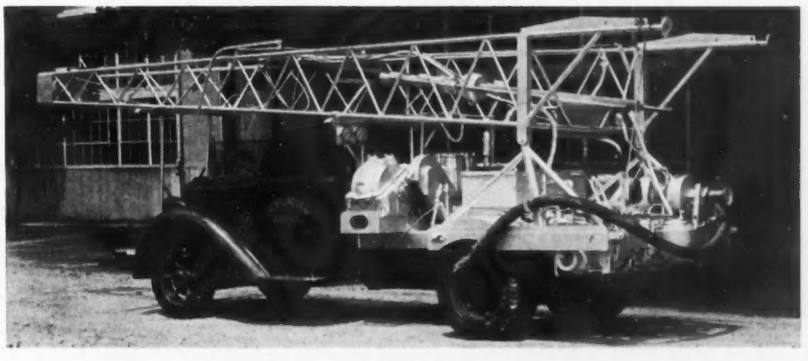
F. E. Fairfield's Abel 1 in the Rosecrans field, was brought in for 980 barrels of 33.5-gravity oil per day at 7588 feet. Superior Oil Company's Maxwell Community 12, a deep test southwest of the field is coring below 8900 feet in shale and is described as a no-dope well trying to find something in the Eighth Callender zone. Western Gulf Oil Company's Bagg 1, another deep test along the east side of the field is coring at 8350 feet and Barnsdall Oil Company's Rosecrans 10 has swabbed wet again at 8747 feet with slight prospects of completing commercially.

In the Torrance Extension, The Texas Company's Oakley 2, is reported to have topped the Nodular shale from 5995 to 6008 feet and stopped drilling in Schist at 6100 feet. It is expected to plug back to the Del Amo zone, having cored some oil sand around 5130 feet.

## CALIFORNIA
### Completions

| Company, Well and Location | Init. Prod. Bbls. | Depth |
|---|---|---|
| **Coyote, East—** | | |
| Bartholomae Oil Corp., Stern 7 | 690 | 4800 |
| **Huntington Beach—** | | |
| Southwest Exploration, State 3 | 353 | 4102 |
| **Long Beach—** | | |
| Coastal Southern Oil, No. 5 | 75 | 4636 |
| De Soto Oil, De Soto 1 | 300 | 10,158 |
| **Montebello—** | | |
| Pongratz Pet., Martin 1 | 1487 | 6700 |
| **Torrance Extension—** | | |
| General, Poggi 12 | 232 | 5200 |
| **Torrance—** | | |
| A & T Oil, Fee 2 | 220 | 5144 |
| Alford Oil, No. 11 | 150 | 5192 |
| Felix Mallon, Mallon 2 | 750 | 5150 |
| Plymouth Oil, Plymouth 1 | 200 | 5125 |
| Standard, Marble 2-11 | 190 | 4970 |
| Woolner Oil, No. 2 | 175 | 5136 |
| **Wilmington—** | | |
| General, Harbor Comm. (LB) 30 | 827 | 3880 |
| Universal Consolidated, Newport 6 | 800 | 4135 |
| Union Pacific, Union Pacific (LB) 100 | 960 | 3964 |
| **East Coalinga—** | | |
| Superior, Coalinga Fee 2 | 840 | 7187 |
| **Kern River—** | | |
| Hast Oil, Kern 5 | 15 | 510 |
| **Sespe—** | | |
| Spelk Oil, Chappuis 1 (w) | 115 | 3635 |
| **Rincon—** | | |
| C. C. M. O. Co., No. B-18 | 514 | 4320 |
| **Rio Vista—** | | |
| Richfield, Potrero Hills 1 | ¶5 | 5334 |
| **Dominguez—** | | |
| Richfield, Dominguez Estate 1 (w) | * | 6954 |
| **Newhall—** | | |
| Continental, Newhall 1 (w) | * | 2616 |
| **Famosa—** | | |
| Shell, KCL A-58-8 (w) | * | 9297 |
| **Fruitvale—** | | |
| Texas Co., Camp-West-Lowe 1 (w) | * | 10,156 |
| **McVan—** | | |
| Frank M. Gilstrap, Carter 1 (w) | * | 2295 |
| **Kettleman North Dome—** | | |
| Standard, No. 21-13P | * | 9075 |
| **Round Mountain—** | | |
| Eastmont Oil, No. 9-28 | * | 1850 |

*Failures; †Junked; ¶Million cu. ft. gas.

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# IMPORTANT WILDCAT TESTS

## ALABAMA

**Barbour**—H. A. Stebbinger's Mrs. Alyce Robertson 1, ne ne 19-10-26, spd. **Choctaw**—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, owdd 7520 ft. **Greene**—R. T. Jeffrey's R. C. Lett 2, 3-20n-2e, sd 720 ft. **Lawrence**—Mid-Southern Pet. Co.'s Rob Jacobs 1, sw se 11-7-7, ruct. **Mobile**—J. C. Prine's King 2, ne ne 4-1n-4w, sd 1120 ft.

## ARKANSAS

**Calhoun**—C. E. Murdock's Southern Kraft 1, nw nw 17-14-13, sd 3291 ft. **Columbia**—Atlantic's Francis Burnett 1, c sw se 14-17-20, dr 4779 ft. Pet. Finance Co.'s Barnett 1, c nw se 14-17-20, elev 321 ft, cored porosity and some saturation 7492-7532 ft, top Reynolds lime 7478 ft, woc, td 7562 ft. Normandie Oil Co.'s Levi Garrett 1, ne ne 23-17-20, dr 4984 ft. Standard of La.'s Minnie Harris 1, ne sw 15-17-19, spd. Tidewater Associated's Seaboard's J. T. Beene 1, se nw 15-18-19, elev 232 ft, top lower Marine 5886 ft, top Smackover lime 8185 ft, cored 8201-27 ft, good porosity and saturation, top water level 8232 ft, sct 7-in csg 8291 ft, completed as oil well, td 8332 ft. Southwood Oil Co.'s Levi Garrett 1, sw sw 13-17-20, porosity with some saturation 7356-88 ft, top Buckner lime 7295 ft, top Reynolds lime 7358 ft, woc, td 7549 ft. **Craighead**—Tenn-Ark Inc.'s Martin 1, 35-14n-3e, ruct, td 1754 ft. **Hot Springs**—J. H. James, Tr.'s Sturgess Lbr. Co. 1, sw sw se 26-6s-18w, woc 63 ft. **La Fayette**—Wadley, Erwin et al's G. W. Taylor 1, c ne sw 15-19-26, elev 213 ft, dr 4380 ft. Ohio & Shell's Warren 1, se se 13-16-24, 9⅝ in csg 2259 ft, elev 213 ft, top Travis Peak 3945 ft, coring 5885 ft. **Little River**—Barbere et al's Mills 1, se sw nw 18-12-29, ru and sd. Clark et al's Strawn 1, se sw 20-10-32, dr 1065 ft last report. Hartford Oil Corp.'s Denning 1, ne ne sw 6-13s-30w, sd 1825 ft. D. L. Hersey et al's W. D. Waldrop 1, se nw 4-13-31, top anhydrite 2208 ft, arr deepen 3446 ft. **Lonoke**—Cabot Drlg. Co.'s Cabot Townsite 1, 18-4n-9w, sd 2420 ft. J. W. Anderson's Eddington 1, nw ne 74n-9w, sd 910 ft. Hudson et al's Young 1, sw nw 8-3n-7w, sd 225 ft. J. F. Russell's J. T. Gunter 1, se se 17-5-10, sd 1650 ft. **Mississippi**—Benedum & Trees' Winston Mack 1, nw sw 3-15n-12e, dr with ct 3528 ft, hd gray tight lime.

## CALIFORNIA

**Los Angeles County**—W. E. Entrikin's "D" 1, 7-3-13, dr 6057 ft. Royal Land Corp.'s No. 1, 8-4n-17w, dr 1325 ft. Richfield's Dominguez Estate 1, 2-4-13, abd 6954 ft. McKeon et al's Carmenita 1, 21-3-11, cem 5 in 8962 ft. Mojave Pet. Co.'s Gorman 1, 5-8n-18w, dr 450 ft. Neu-Cal Oil Co.'s No. 1, 17-6-12, so&g below 800 ft, td 1070 ft. Mojave Pet. Co.'s Jennings 2, 33-5-14, dr 260 ft. Continental's Newhall 1, 20-4-17, abd 2616 ft. Rolling Hills Pet. Co.'s Weston 1, 27-4-14, circulating 5100 ft. Treasure Oil Co.'s Venice 7, 34-3-15, P. P. est 100 b/d 24.0 grav. Tide Water's Porter 1, 27-3-16, P. P. 251 b/d 24.2 grav. Standard's Ward 1, 27-3-16, grading roads. Texas Co.'s Anderson-Spring 1, 9-2-15, stdg plugged 7285 ft. R. T. Grady's Sepulveda 1, 23-5-14, dr 650 ft. H. C. Oil Co.'s Joyce 1, 22-2-11, dr 500 ft. **Orange County**—Texas Co.'s A-13 1, 8-4-10, dr 546 ft. Shell's Irvine 1, 6-7-9, dr 2647 ft; Irvine 2, 6-7-9, lcn. Congress Oil Co.'s Kraemer 2, 36-3-9, foundation. Shell's Dunford 1, 22-3-9, dr 1969 ft. **San Bernardino County**—Carbon Canyon Oil Co.'s Schuh 1, 30-2-8, rur. Southern Counties Pet. Drlg. Co.'s Los Serranos 1, 22-2-8, dr 3500 ft. **San Diego County**—Dauphin Dev. Corp.'s Irwin Kelly 1, 16-12-4, dr 875 ft. Dauphin's Dunn 1, ?-12-4, rur.

### SAN JOAQUIN VALLEY

**Fresno County**—Robert S. Lytle's No. 37-7F, 7-20-16, dr 4760 ft. Lytle's No. 86-12C, 12-20-15, lcn; No. 71-18F, 18-20-16, dr 3012 ft.

### ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
bs—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so&g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

Standard's No. 71-13C, 13-20-15, rur; No. 1-17F, 17-20-16, dr 6830 ft. Superior's Cagle 1, 6-20-16, dr 6281 ft; Coalinga Fee 2, 7-20-16. I. P. 721 b/10 hrs 7187 ft. General's Esperanza 101, 6-20-15, dr 575 ft; Esperanza 102, 6-20-15, rig. Kolingo Ref. Co.'s No. 1, 14-20-14, dr 750 ft. Progressive Oil Co.'s Calif 3, 20-19-15, dr 525 ft. Section 30 Oil Co.'s No. 5, 30-19-15, bailing to test 1390-1410 ft. Stuart Oil Co.'s Stuart 1, 12-21-14, dr 1175 ft. Tide Water's Fleishacker 1, 1-19-15, dr 7131 ft. Dauphin Dev. Co.'s Ragan 1, 19-21-14, dr 4535 ft. **Kern County**—California Expl. Co.'s Calif. Lds. Dougherty-Salisbury 1, 7-29-24, dr 10,037 ft. Shell's KCL B-87-4, 4-30-25, dr 10,276 ft. Ohio's KCL F-2, 10-31-25, rur. Standard's KCL 20-1, 9-31-25, lcn. Gibson Oil Co.'s Alferitz 3, 14-25-18, P. P. 50 b/d, 50%. G. E. Renner & R. H. L. Oil Co.'s R. H. L. 2, 27-30-30, circulating 2320 ft. Richfield's Tupman-Western 1, 32-30-25, washing over 4¾-inch liner 8645 ft. Shell's KCL A-58-8, 8-27-26, abd 9297 ft. Texas Co.'s Camp-West-Lowe 1, 7-29-27, abd 10,156 ft. Richfield's KCL 1, 28-11-20, dr 9263 ft. Tide Water's S. P. 2, 15-11-19, dr 5740 ft. Superior's KCL-12, 3-30-26, dr 9155 ft. D. D. Angle's Claflin 2, 10-27-27, dr 3325 ft. Frank M. Gilstrap's Carter 1, 7-27-27, abd 2295 ft. Milburn Violette's Violette 1, 27-26-28, rng tubing 1414 ft. Vendome Oil Co.'s No. 1, 28-26-28, rur. Julius Freid's No. 1, 34-32-24, bailing mud and water 3105 ft, td 5035 ft. Texas Co.'s Solomon 1, 13-27-18, dr 125 ft. Texas' Mountford 1, 19-27-19, lcn. Richfield's Union Ave. 1, 6-30-28, dr 8660 ft shale. Jules Rufener's Julianne 1, 2-29-29, dr 1440 ft. Shell's S. P. L. 1, 7-29-30, dr 1000 ft. Continental's KCL A-4-8, 8-27-24, rur. Standard's Mushrush 2, 7-27-24, rur; KCL 8B-2, 17-27-24, rig. **Tulare County**—V. F. Arnold's Yellow King 1, 9-23-28, dr 140 ft.

### COASTAL COUNTIES

**Santa Barbara County**—Litho Oil Co.'s Rhode Island Estate 1, 4-4-30, rig. Douglas-Stratton Oil Co.'s No. 1, 8-8-33, pumping water 7238 ft. Richfield's Tinaquaic 1, 36-9-32, dr 2629 ft. The Petrol Corp.'s Magenheimer 5-11, 9-8-32, stdg plugged 4500 ft. Oil Group Inc.'s Hyland 1, 16-4-26, rig. **San Luis Obispo**—Cholame Synd.'s Jack 2, 10-25-15, to perf below 3300 ft. Calif. Pet. Co.'s Irons 1, 19-10-24, co 1710 ft. Epco, Inc.'s Epco 1, 27-26-13, dr 3140 ft. **Ventura County**—High Mesa Oil Co.'s Butcher 1,16-4-22, dr 1765 ft. Phillip Drain's Cosby 1, 14-4-19, prep to deepen, 1120 ft. Claran Oil Co.'s Hardison 1, 22-4-20, dr 1985 ft. H. A. Iver's Kentuck 14, 1-4-20, lcn. Merchant's Pet. Co.'s Cochrane 8, 1-4-20, dr oil sand and shale 1990 ft. Speik Oil Co.'s Chappuis 1, 33-5-19, I. P. 115 b/d, 32.0 grav., 1.0%. El Rancho Oil's Elkins 2, 9-3-19, rur. Texas Co.'s Shiells 136, 4-3-19, rur. G. M. Levesque's Robertson 1, 17-2-18, dr 500 ft. Section 20 Oil's No. 1, 20-5n-19w, dr shale and oil sand 2395 ft. Hardison & Temple's No. 1, 22-4-21, 6⅝ inch stdg re-cemtd 656 ft. Ventura Drilling Co.'s Canet 1, 10-3-23, dr 2208 ft. Ventura Expl. Co.'s Sexton 1, 30-3-22, co 9511 ft.

### NORTHERN CALIFORNIA

**Madera County**—Amerada's Dos Palos Core Hole A, 32-11s-12e, dr 3510 ft. **Solano County**—Richfield's Potrero Hills 1, 10-4n-1w, I. P. 5000 MCF gas, td 5334 ft. Bishop Oil's No. 1, 19-4n-3e, lcn cancelled.

## FLORIDA

**Levy**—Fla. Discovery Oil Co.'s Sholtz 2, sw sw ne 9-15s-13e, top chalk 3110 ft, gas odor 3853 ft, sr 4120 ft. **Nassau**—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, hole clean, dr 4327 ft, sand. **Polk**—Edw. A. Hill's Polk Lbr. 1, nw nw ne 32-25s-25e, dk. **Suwannee**—J. W. Phillips Oil Expl. Co.'s Shilkett 1, nw nw 14-4s-14e, spd and sd. Wm. G. Blanchard's Lucy Cotton 1, se ne 35-3s-11e, elev 70 ft, sd 203 ft.

## KANSAS

**Barton**—Carlock & Atlantic Refining Co.'s Domel 1, ne nw 30-17-13w, 5-inch 3418 ft. Murfin et al's Birzer 1, ne sw 21-19-11w, dr 2125 ft. Amerada Petroleum Corp.'s Olga Kruckenberg 1, c ne ne 14-19-15w, dr 200 ft. **Butler**—Higgens & Pierce's Shrieves 1-A, ne nw se 22-26-4e, dr 325 ft. Simpson & Estes' Farm 1, se ne ne 30-27-7e, dr 600 ft. Bowland & McCoy's Frankson 1, se sw 2-29-6e, dr 350 ft. **Coffey**—Cramm & Sackrider's Allen 1, se ne se 13-21-15e, rur. **Cowley**—Barnsdall Oil Co.'s Snodgrass 1, nw se 36-30-6e, dr 685 ft. Gralapp et al's Clark 1, nw ne 11-31-3e, set whipstock 2630 ft. Henderson's King 1, nec 22-31-4e, ur 1775 ft. **Dickinson**—Franks et al's Huffman 1, nw sw 11-13-1e, dr 1450 ft. **Ellis**—Carlock's Phillips 1, se sw ne 10-15-17w, dr 900 ft. **Ellsworth**—Hollow's Hohl Estate 1, nw ne 3-18-10w, rur. **Graham**—Continental Oil Co.'s Putnam Investment Co. 1, cwl sw 3-9-21w, dr 3070 ft. **Greenwood**—Turner et al's Black 1, se ne nw 3-27-13e, dr 925 ft. **Kingman**—Duwe & Farris et al's Kimmiman 1, ne nw sw 12-30-9w, testing 4580 ft. **Marion**—Johnson et al's Miltz 1, swc 24-17-4e, testing 2380 ft. Cox & McGinnis & Saco Oil Co.'s Jolliffe 1, c s½ sw se 2-22-5e, hfw 2457 ft. **Ness**—Oriental Oil Co.'s Beardslee 1, nec 21-18-25w, rur. **Osage**—Edwards et al's Detrick 1, nw se 21-14-15e, co 1130 ft. **Ottawa**—Babcock's Copeman 1, cnl s¼ s½ se 7-10-2w, hfw 2915 ft, so 3040 ft. **Rice**—Cities Service Oil et al's Dewitt 1, csl ne 33-19-9w, dr 1845 ft. Cities Service Oil Co. et al's Murphy 1, cwl ne 8-19-9w, dr 3215 ft. Tatlock's Proffitt 1, sw se sw 12-20-10w, 7-inch 3318 ft. Virginia Drilling Co.'s Clawson 1, sw nw 17-20-11w, rust 3295 ft. Virginia Drilling Co.'s Schlockermeyer 1, se nw 7-21-11w, rur. **Rooks**—Producers' Ham 1, sw nw 25-7-19w, dr 2785 ft. **Rush**—Cities Service Oil Co.'s Hall "D" 1, c nw¼ 2-12-17w, rust 3602 ft. **Russell**—Nelson's Polcyn 1, swc 31-13-15w, co 2855 ft. Shields' Della Gross 1-A, csl sw se 5-15-13w, rog. Wakefield's Meharg 1, sec 16-15-13w, dr 715 ft. **Sumner**—Cameron & Spencer's Frey 1, nwc 5-30-1e, dr 3865 ft.

## NORTH LOUISIANA

**Bienville**—Ark. La. Gas Co.'s Gayoso 2, sw se 14-16n-10w, dr 1460 ft shale and sands. Producers O&G Co.'s Graves-Thomas 1, se sw se 23-15n-10w, dr 1325 ft. **Caddo**—Colonial Oil Corp.'s Thigpen-Herold 1, ne sw 34-22n-16w, 9⅝ in csg 1500 ft, pb to 2600 ft, perf csg 2455-65 ft, completed flowing 432 bbls oil daily, old td 4896 ft. J. Thos. Driscoll's Woolworth 1, se se 19-18n-14w, woc surf csg. W. C. Feazel's T. R. Hughes 1, se se 33-18n-14w, dr 3080 ft. Harry Hanbury's Loe 1, se sw 23-18n-14w, elev 174 ft, top massive anhydrite 4336 ft, dr 5485 ft. C. D. Loe et al's Lionel Meyer 1, sw se 33-18n-14w, elev 224 ft, massive anhydrite 4390-4660 ft, tested sw, later pb and tested oil and sw, trying squeeze job, old td 5632 ft. Oils, Inc.'s Cazaux 1, 16-16n-13w, 8¼ in csg 2700 ft, td 3502 ft. J. Weil's Dreyfuss 1, sw sw 20-18n-14w, lcn. R. O. Carter et al's Marks Meyer 1, 34-18n-14w, lcn. R. E. Allison's Mabry-Jones 1, se se 21-18n-14w, 9⅝ in csg 2330 ft, top Pettet 5556 ft.


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cored 24 ft saturation, 5½ in csg 5607 ft, sw, abn, td 5612 ft. Ellerbe 3, sw ne 28-18n-14w, rur; Ellerbe 4, nw ne 34-18n-14w, top massive anhydrite 4336 ft, dr 5355 ft; Ellerbe 5, 35-18n-14w, dr 5158 ft. J. T. Parks et al's Grayson 1, se se 30-19n-15w, woc surf csg. Hurricane Pet. Co.'s Chandler 2, nw se 34-18n-14w, dr 3640 ft. Ablon & Edmonson's R. Hayle 1, sw sw 20-18n-14w, mim. Petroleum Heat & Power Co.'s Cupples 1, 14-16n-13w, mim. **Catahoula**—Sibley-Sabine Oil Corp.'s Peck 1, 36-10n-8e, sd 3212 ft. **Claiborne**—E. T. Oakes et al's E. C. Kilgore 2, nw se 28-21n-5w, cored 9 ft saturated Pettet lime 7-in csg 5288 ft, arr run 4½ in csg, td 5317 ft. **De Soto**—S. S. Alexander's Stell A-1, ne ne 5-12n-16w, elev 252 ft, top Washita 2710 ft, pumped 3 to 5 bbls oil day and est 2 mil ft gas 2761 ft, sd 3010 ft. **Madison**—Continental Oil Co.'s Singer Mfg. Co. 3, nw nw 2-15n-11e, spd 7-in csg 310 ft, woc, td 625 ft. **Natchitoches**—Jack Lent's Wheatley 1, 17-10n-10w, ur. **Red River**—Magnolia's Pugh 59, se nw 12-12n-11w, elev 140 ft, top lower Cretaceous 2592 ft, top anhydrite 4725 ft, dry abn, td 6487 ft. N. W. Hunter's Michel LeLong 1, nw nw 33-12n-10w, arr run formation tester, 3036 ft. **Sabine**—Earl Fox et al's Cook Ld. Co. 1, se nw 1-9n-12w, owdd 3655 ft. LeGrande et al's Tatum 1, nw ne 17-8n-13w, 700 ft oih, arr pump, td 2340 ft. Tropical Oil Co.'s Long-Bell 1, 5-8n-13w, arr deepen 3507 ft. Zwolle Synd.'s Mansfield Hdw. Co. 1, ne ne 8-7n-14w, tested dry, sd 4325 ft. **Tensas**—H. B. Schumacher's Mounds 4, 39-11n-12e, arr make test, td 2450 ft. **Webster**—Magnolia's Pardee C-1, c nw ne 17-23n-11w, elev 203 ft, dry so 6025 ft, top Travis Peak 6054 ft, top lower Marine 7998 ft, cored 6 ft sand, so 8504-10 ft, ran electrical log, did not abn, pb to 5976 ft, old td 10,066 ft. H. M. Branton 1, ne sw ne 6-22n-9w, elev 226 ft, top anhydrite 4225 ft, dr 7445 ft. Roseberry-Bailey 1, se 29-23n-9w, dr 4990 ft. Union Prod. Co.'s Walker-Morgan 1, c se 30-18n-8w, dr 5797 ft.

## SOUTH LOUISIANA

**Acadia**—Tennark's C. J. Freeland 1, Churchpoint area, 64-7s-2e, dr shale 1915 ft. **Assumption**—Humble's Milliken & Farwell 1, Labadieville area, 15-14s-14e, dr 6240 ft. **Avoyelles**—S. Richardson's Haas 1, Eola area, 7-2s-3e, dr 7300 ft. **Calcasieu**—Humble's Knapp 1 (core test), 33-8s-1e, abn 8000 ft; same operator's Miller 1, Chalkley area, 32-11s-6w, abn 8685 ft. D. B. McDaniel's School Land 2, e of Gillis, 16-9s-7w, dr 6432 ft. **Cameron**—Federal Pet. Co.'s State 2, Calcasieu Lake, 13s-9w, woc 1493 ft. Superior's Pradia 1, n of Creole, 4-15s-8w, preparing to spud. **Iberia**—Texas Co.'s State 5, Fausse Point, 35-11s-8e, dr 9419 ft. **Iberville**—Humble's Wilbert 1, Bayou des Glaise area, 78-8s-8e, canal. California Co.'s Schwing Lbr. Co. 1, Bayou Sorrell area, 95-10s-10e, mim. **Orleans**—W. T. Burton's State 1, in Lake Ponchartrain, 10s-13e, dr 10,400 ft; Faubourgde Monteluzin B-2, 11s-13e, dr shale 9926 ft. **Plaquemines**—Texas Co.'s Bastian Bay L. L. E. 1, Bastian Bay, 43-20s-28e, dr 2130 ft. **St. Bernard**—Gulf's State RR 4, Lake Borgne, 12s-15e, dr 8321 ft. W. Helis' Meraux-Nunez 1, Chalmette area, 34-12s-12w, dr 6315 ft. Vendome Pet. Corp.'s Kennelworth 1, Shell Beach area, 59-13s-14e, dr shale 4819 ft. **St. Charles**—Texas Co.'s L. L. E.-Paradis 1, Paradis area, 39-14s-20e, dr 5019 ft. **St. James**—Shell's H. Schexneyder 1, 38-12s-15e, dr sand no show 7171 ft. **St. Martin**—Texas Co.'s St. Martin Land Company 11, Henderson area, 21-8s-7e, testing 8065 ft. State 6, Lake Mongoulouis area, 10-10s-9e, woc 9777 ft. **St. Mary**—St. Mary Oil Co.'s Hebert 2, Charenton area, 31-13s-9e, abn 3110 ft. **Terrebonne**—Texas Co.'s Continental Land & Fur Co. 1, Lake DeCade area, dr 11,356 ft; State 2, Caillou Bay, driving piling.

## MISSISSIPPI

**Calhoun**—L. C. Lucas' E. C. Boland 1, sw se 9-22n-9e, top Selma chalk 738 ft, sd for csg 792 ft. **Clarke**—J. L. Ryan's M. Eddins 1, sw sw 29-2n-14e, sd 500 ft. **Hinds**—Cleve Love et al's S. F. Johnson 1, ne se 29-6n-1w, elev 343 ft, cored sand 5144-50 ft, ran electrical log to 5150 ft, sd curing titles 5218 ft sand. **Pike**—A. N. Simpson et al's Cupit 1, 25-2-7, dk and mir. **Simpson**—Cleve Love et al's N. E. Garner 1, sw ne 1-10n-17w, sd for csg 920 ft. **Yalabousha**—Chas. W. Crader's Jno. Bruce James 1, ne ne 24-11s-6w, top Midway 728 ft, top Arkadelphia chalk 1565 ft, temp. abn. 2002 ft shale. Griffin & Melvin's Smith-Warren 1, nw se 6-24n-6e, mim.

## OKLAHOMA

**Carter**—Pure Oil Co.'s Noble 1, c ne se 35-3s-1e, dr 3625 ft. **Cleveland**—Burke-Greis' Alberts 1, se sw nw 19-7n-1w, dr 3185 ft. Harper & Turner's Taylor 1, se ne nw 23-8n-2w, dr 5795 ft. Nels-Burrton's Hirsch 1, nwc ne 17-9n-2w, testing, td 7695 ft. **Cotton**—Turner et al's Collins 5, c ne ne 18-4s-10w, td 1237 ft, to dd. **Garfield**—Champlin Refining Co.'s Allen 1, sec 26-24n-8w, rur. **Grady**—Winkler's Chapman 1, sec ne 23-4n-6w, sd 2805 ft. Carter Oil Co. et al's Smith 1, c se sw 25-5n-8w, dr 6125 ft. **Hughes**—Phillips Petroleum Co.'s Mandler 1, se sw sw 1-6n-10e, dr 5635 ft. Wood's Aldridge 1-A, sw nw ne 5-8n-8e, sd 400 ft. **Jefferson**—Bredwell Oil Co.'s Seay 1 "I," se ne sw 29-6s-5w, dr 100 ft. **Kay**—Kaw Oil Co.'s Wolfenbarger 1, nw ne sw 9-27n-4e, lcn. Nye's Wolfenbarger 1, sw nw sw 16-27n-4e, dr 1125 ft. **Kiowa**—Emerson's Handcock 1, sec ne 26-6n-15w, dr 525 ft. **Lincoln**—Starr Oil & Gas Co.'s Georgia 1, se sw ne 35-18n-4e, dr 1525 ft. **Murray**—Saunders et al's Vanderslice 1, c sw sw 25-2n-2e, rur. **Muskogee**—Heydrick's Paschall 1, ne se nw 22-13n-19e, sd 1430 ft. **Okfuskee**—Mead Production Co.'s Pine 1, swc nw 14-12n-11e, td 2830 ft, rig burned down. **Okmulgee**—Wise Drilling Co.'s Morrow 1, sw nw ne 16-15n-13e, sd 150 ft. Gutowsky et al's Lankford 1, nec se 34-17n-6w, dr 875 ft. **Pawnee**—Kelly's Hill 1, swc se 1-21n-5e, ur 1280 ft. **Payne**—Starr et al's McKenzie 1, swc ne 13-18n-3e, dr 4085 ft. **Pontotoc**—Casey's Pace 1, swc ne 14-2n-7e, sd 1105 ft. Patsy Oil Co.'s Spence 1, nw se se 19-2n-8e, dr 4675 ft. Union Development Co.'s Abbott 1-A, sw nw ne 34-3n-6e, dr 4150 ft. **Pottawatomie**—Conley Drilling Co.'s Townsend 1, nec nw 7-6n-4e, rur. Wood Oil Co.'s Peters 1, sw se ne 28-8n-4e, dr 1055 ft. **Seminole**—Stonewall Oil & Gas Co.'s Myers 1, sw nw sw 10-5n-6e, lcn. Atlantic Refining Co.'s Atkinson 1, nwc sw 17-6n-6e, rur. Vallines' Dees 1, nec nw 6-8n-7e, rog. **Stephens**—Phillips Petroleum Co.'s Culbertson 1, nwc se 4-1n-5w, td 350 ft. **Washita**—Continental Oil Co.'s Proctor 1, c nw¼ 28-10n-20w, ur 6895 ft.

## WEST TEXAS

(This report is confined to the north portion of the Permian basin.)

**Andrews**—Anderson-Prichard Oil Corp.'s W. F. Cowden-strip 1, sec 102, elev 3162 ft, td 4226 ft, used 5500 gals acid, flowed 1207 bbls inital; W. F. Cowden-strip 2, sec 102, elev 3169 ft, dr 4240 ft. Anderson-Prichard Oil Corp-Osage Drl. Co.'s University-Humble 1, SEc sec 13, blk 14, elev 3210 ft, top anhydrite 1670 ft, top Yates 2790 ft, est 5,000,000 ft gas 2998-3010 ft, dr 4225 ft. Great Western Producers, Inc.'s Holt 1, c ne ne T&P sec 1, blk 43, T-1-N, elev 3124 ft, top anhydrite 1765 ft, top salt 1783 ft, top Yates 3000 ft, shot 110 qts 4450-76 ft, pumped off, dd to 4580 ft, dry and abd. Honolulu Oil Corp.'s Parker 1-18, se se sw sw PSL sec 18, blk A-44, top anhydrite 1920 ft, dr 2500 ft. Montecito Oil Corp. et al's E. Cowden-Sinco 4, se ne nw T&P sec 1, blk 44, T-2-N, td 4226 ft, used 1500 gals acid, flowed 450 bbls initial; Cowden-Sinco 5, sw ne nw sec 1, rur, Rogers & Rogers' University 1, near c e½ sw¼ sec 40, blk 9, elev 3149 ft, top Yates 2930 ft, top lime 4020 ft, td 4539 ft, pb to 4466 ft, shot 195 qts 4388-4466 ft, dry and abd; University 1-B, c sw¼ sec 20, blk 9, top anhydrite 1840 ft, dr 2820 ft. The Texas Co.'s University 1-H, nw ne se sec 4, blk 14, elev 3165 ft, top anhydrite 1670 ft, top Yates 2790 ft, sul w 4540-4856 ft, pb to 4083 ft, gun-perforated cas 18 shots 2920-50 ft, initial 1,760,000 ft dry gas. J. W. Tripplehorn et al's M. A. Thornberry 1, nec PSL sec 2, blk A-42, top salt 1790 ft, top Yates 2840 ft, td 4476 ft, shot 600 qts 4300-4468 ft, swab 7 bbls oil daily, sdo. H. C. Wheeler et al's Farmers State Bank (Carlton)-Gulf 1, c se sw PSL sec 18, blk A-36, elev 3207 ft, top anhydrite 1880 ft, top Yates 2930 ft, top lime 4030 ft, used 5000 gals acid at 4615 ft, dd to sul w 4708-31 ft, dry and abd. **Cochran**—T. G. Shaw et al's C. S. Dean-Texas Co. 1, s½ League 94, Mills C.S.L. sur, mim. The Texas Co.'s H. T. Boyd 1, near c labor 25, league 56, Oldham C.S.L. sur, elev 3671 ft, top anhydrite 2295 ft, top brown lime 3910 ft, top pay 5059 ft, sul w 5086-92 ft, pb to 6086 ft, sd for acid. **Dawson**—Daw-Tex Oil Co.'s J. E. Neeley 1, c nw nw T&P sec 28, blk 35, T-6-N, elev 3045 ft, top anhydrite 1880 ft, cem cas and rust, td 2063 ft. **Dickens**—Humble's Matador L&C Co. 1, c sw ne sec 26, blk 1, Shock-Arnold sur, elev 2476 ft, top anhydrite 976 ft, top brown lime 2092 ft, fsh 2180 ft. **Gaines**—Harry Adams et al's G. Crain-Ohio 1, c e½ sw nw W. T. sec 216, blk G, elev 3413 ft, top anhydrite 2203 ft, top Yates 3280 ft, top brown lime 4370 ft, tested dry 5273 ft, dr 5280 ft. Amerada's T. S. Riley 2, c sw se W. T. Ry. sec 229, blk G, top anhydrite 1950 ft, salt 2016-2910 ft, dr 3790 ft. Osage Drlg. Co.-Atlantic Ref. Co.'s Tippett 1, c se ne W. T. sec 266, blk G, dr 1980 ft. **Garza**—Gulf Oil Corp.'s S. P. Swenson Cattle Co. 1, c nw H&GN sec 25, blk 2, elev 2274 ft, trace oil 6277 ft, td in granite 8104 ft, pb to 7400 ft and gun perforated 10 shots 7327-34 ft, flowed 259 bbls net oil (36.7 gravity), 32 hrs, pb to upper shows. **Hockley**—E. T. Marion-Penn Royalties, Inc.'s Lawless-Sundown Gin lot 1, swc labor 58, league 39, Maverick C.S.L. rust. S. W. Richardson et al's A. E. Coe 1, swc labor 53, league 40, Maverick C.S.L. lcn. The Texas Co.'s Bob Slaughter 4, labor 67, Zavalla C.S.L. sur, league 39, elev 3562 ft, pay 4925-85 ft, used 2000 gals acid, swab and flowed 176 bbls oil 24 hrs. **Kent**—Ray Dawson et al's Haggins 1, near c nw ne H&GN sec 118, blk 1, sd 360 ft. B. Dolman et al's C. V. O'Keefe 1, ne ne nw H&GN sec 50, blk 1, sd 300 ft. **Lynn**—J. L. Baldridge et al's Alamo Lumber Co. 1, ne sw sw HE&WT sec 151, elev 3267 ft, top anhydrite 2130 ft, top Yates 2900 ft, top San Andreas 4170 ft, sd for cas 4450 ft. **Martin**—T. G. Shaw Oil Corp.'s H. N. Wilkinson 1, ne ne se sec 35, blk A, Bauer-Cockrell sur, elev 2519 ft, top lime 3190 ft, sd for cas 3226 ft. **Yoakum**—J. E. Mabee et al's W. N. Willard 2, near c e½ e½ nw¼ sec 741, blk D, dr 1500 ft, solid lime 4560 ft. Devonian Oil Co.'s W. S. Hodges 1, sw sw se sec 696, rur. Shell's J. M. Rutts 1, sw nw nw sec 743, blk D, elev 3544 ft, top anhydrite 2380 ft, top Yates 3190 ft, top brown lime 4160 ft, top solid lime 4650 ft, broken pay 5060-5266 ft, testing on pump; Waples-Platter Co. 1, c ne sec 616, blk D, lcn.

## EAST TEXAS

**Anderson**—Barnsdall Oil Co.'s W. L. Tubbs 2 (40-ac), Sam Edmondson sur, Cayuga Trinity test, elev 329 ft, top Woodbine 4102 ft, top Georgetown lime 4670 ft, 1st anhydrite stringer 7035 ft, dr 7070 ft. **Cherokee**—C. C. Lanier et al's A. T. O'Neal 1 (131.6-ac), J. M. Procella sur, 3 mi e Troup, elev 436 ft, dk. J. R. Bunn Drl. Co.'s S. W. Lang 1 (371-ac), Levi Jordan sur, Rusk area, elev 404 ft, Pecan chalk 4020-4410 ft, Austin chalk 4930-5152 ft, top Woodbine 5152 ft, water sand 5178 ft, coring 5185 ft. **Dallas**—Mauldin Oil Co.'s W. E. Howell 1 (107-ac), S. Layton sur, 8 mi e Grapevine, sd 2408 ft. **Freestone**—A. J. Willis et al's Freedman Bros. 1, A. Careo sur No. 120, 3½ mi nw Steward Mill, mim. **Henderson**—Humble-Tide Water-Seaboard's S. S. McGee 1 (342-ac), R. Acosta sur, Opelika Trinity test, elev 424 ft, Pecan chalk 2579-2851 ft, Austin chalk 3670-4012 ft, top Woodbine 4335 ft, top Georgetown (broken) 5160 ft, top hard lime 5195 ft, top Paluxy 6210 ft, dr 6795 ft. J. V. Scrivenor et al's Wm. Richardson 1, F. Holland sur, Stockard area, 6 mi nw Athens, elev 480 ft, top Pecan chalk 2200 ft, Austin chalk 3335-3700 ft, Woodbine sand 4323-4590 ft, dry and abd. **Houston**—Humble's Henry Dailey 1-B (68-ac), J. G. Thompson sur, Pecan chalk 4237-4305 ft, Austin chalk 5240-5573 ft, top Woodbine series 5840 ft, w.s. 5867-74 ft, pb to 3750 ft, making directional hole, dr 4550 ft; Jim Burns-R. Smith 2 (132-ac), J. G. Thompson sur, lcn. John G. Mayo & Cooke's J. H. Kolb 1 (153.6-ac), F. Hemiger sur, 2¾ mi n Grapeland, rur. Wynne Drl. Co.'s Aggie Price 1 (117-ac), T. Strother sur, 4 mi w Grapeland, elev 480 ft, Pecan chalk 4590-4790 ft, Austin chalk 5587-5940 ft, top Woodbine series 6075 ft, dry and abd 6113 ft. **Kaufman**—Sam Knoerr et al's J. P. Hunter 1 (17-ac), P. Walker sur, 5 mi s Terrell, dk. W. S. McGee et al's Pritchett 1 (15-ac), J. Hendricks sur, 7 mi w Mabank, elev 397 ft, Austin chalk 2092-2470 ft, top Woodbine 2294 ft, dry and abd 3104 ft. J. F. McLaughlin et al's Wood-Nash 1, J. C. Cortez sur, ¾ mi se Scurry, dk. **Morris**—V. A. Hughes et al's Eugene Hall 1 (177½-ac), L. Jordan sur, 5 mi ne Daingerfield, rur. **Rains**—McKinley & Hastings' McTaggert 1 (21-ac), B. Miller sur, 1 mi w Emory, elev 465 ft, sp and sd. **Smith**—J. H. Thomason et al's J. W. Bartlett 1 (112.84-ac), R. G. Stewart sur, ½ mi se Jamestown, trace dead oil, sd 1868 ft. **Upshur**—R. E. L. Johnson et al's Liz Parker 1 (56-ac), John B. Goy sur, 7½ mi w Coffeyville, cem surface pipe. **Van Zandt**—D. H. Godley-Richards & Holloway's S. H. Rhodes 1 (46.34-ac), L. H. Bass sur, 5½ mi ne Van, elev 468 ft, rur. F. A. Richardson et al's B. C. Dodd 1 (180-ac), T. W. Hutcherson sur, 2 mi s Grand Saline, elev 427 ft, td 4278 ft, pb to 4050 ft and sd.

## EAST TEXAS BORDER COUNTIES

**Harrison**—R. S. Barnwell's Mrs. Luther Smith 1, A. D. Hope sur, elev 185 ft, perf csg 2450 ft, testing with so, td 2830 ft. W. S. King's T. J. Taylor 1, Henry Martin sur (1 mi e Karnack), dr 1720 ft. **Marion**—Tom Bell's Moseley 1, D. Lane sur, fsg, td 2574 ft. **Panola**—E. P. Pewitt et al's Rushing 1 (751-ac), install heavier rig 30 ft. **Sabine**—Hugo Allen's Brooks 1, Isaac Lowe sur, wo, tested so, dry abn td 5885 ft (sec. abandonment). **San Augustine**—Superior's Long-Bell 1, S. F. R. R. sur 5, dr 4368 ft. **Shelby**—Redditt & Gray's Pickering Lbr. Co. 2, P. J. Loggins sur, sd 4225 ft.

## TEXAS GULF COAST

**Brazoria**—Grey, Wolf & Mayo's Hughes 1, Fresno area, F. B. Drake sur, abn 6261 ft. Humble's Masterson 1, Anchor area, Geo. Robinson sur, dr shale 9382 ft. **Brazos**—Lomak Oil Co.'s Jerichow 1, Millican area, E. M. Millican sur, dr shale 3845 ft. **Chambers**—Don Moore et al's Maley 1, ne Cotton Lake, B. Winfree sur, dr shale 3640 ft. **Harris**—H. H. Given's Adoue 2, Addicks area, David Middleton sur, sd 1025 ft. Jack Frazier's Carter Inv. Co. 1, Highland area, T. Patching sur, fsh 4717 ft; Griffith 1, Mt. Houston area, A. Smith sur, abn 8350 ft. **Jefferson**—Humble's McFaddin B-13, McFaddin Beach salt dome, in Gulf of Mexico, dr shale 5019 ft. Merit & British American Oil Co.'s Gladys City 2, flank of Spindletop, J. A. Veatch sur dr shale 4371 ft. **Matagorda**—Sun's Cavailin 1, sw of Palacios, J. Duncan sur, dr shale 135 ft. **Montgomery** — Pennington-Cartwright's Banker Estate 1, w of Conroe, L. M. H. Washington sur, sd 1033 ft. J. Smith et al's Scott 1, Dacus area, F. A. Wheeler sur, dr shale 3623 ft. **Orange**—Sun's Lutcher-Moore 1, North Orange area, B. Johnston sur, dr shale 9414 ft. **Trinity**—C. D. Davis et al's Gibson 1, n of Trinity, A. Donovan sur, dr shale 2310 ft. Texas Long Leaf Lumber Company's Thompson Lbr. Co. 1, nw of Trinity, J. Ortego sur, abn 2565 ft.

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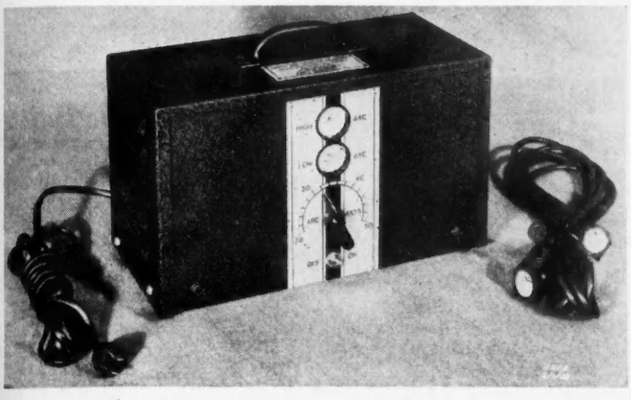
### WELDING CONTROL
**A. O. Smith Corporation**

Uniformly high quality welds, particularly for applications where the expense and inconvenience of X-ray do not seem justified, are now made possible with the "Arc-Length Monitor," new product developed by the research division of the A. O. Smith Corporation, Milwaukee, Wis.

In the vast majority of welding applications throughout industry, there has been no routine method to insure high quality work with this universally accepted production tool. Heretofore quality was at the mercy of the human element, which rested upon the training, experience and attitude of the individual welder.

X-ray has proven satisfactory within limits, but it can-



**A. O. Smith Welding Control**

not be depended upon to reveal harmful foreign inclusions in the weld metal or excessive amounts of nitrides. Various recording methods are also in use to indicate current and voltage values after completion of the weld, but these are also "after the fact" indications.

The Arc-Length Monitor is a practical development which fits into present shop practices. It helps the worker make a good weld while he is in the act of welding. Smith research proved long ago that, while control over voltage of itself is no difinte assurance of a good weld, in nearly every case of poor welds there was a relation to the voltage involved. This situation, if controlled through definite indications to the welder during the process of welding, removes one of the main variables in welding technique. Thus it promotes higher quality welds.

The function of the device is as follows: The welder is informed of the length of his arc by means of two tiny bulbs, mounted inside his welding helmet, one on each side of the window through which he observes the arc. Both bulbs are normally dark at the selected voltage. The one to the right glows faintly, and with increased intensity, as the voltage increases from that selected; the one to the left responds similarly as the voltage decreases from that selected. Maximum brilliance is kept well below the point of hurting the operator's eyes or interfering with his work. The instrument itself, which contains signal lights similar to those in the welder's helmet, is placed where it can be observed by the production or welding supervisor.

The Monitor will be found particularly effective where very light gauge materials are used, particularly such expensive metals as stainless steel, requiring close control of the arc. It has also proven invaluable for periodically checking the ability of experienced operators and training new operators. Experiments in Smith's huge welding plant show that new operators acquire ability to hold a steady arc in about one third the usual time. The Monitor is also useful in minimizing controversy over test results in laboratories where it is desired to duplicate working conditions for welded specimens. Incidentally, it has the psychological effect of giving the welder an inducement to exercise extra care in his work.

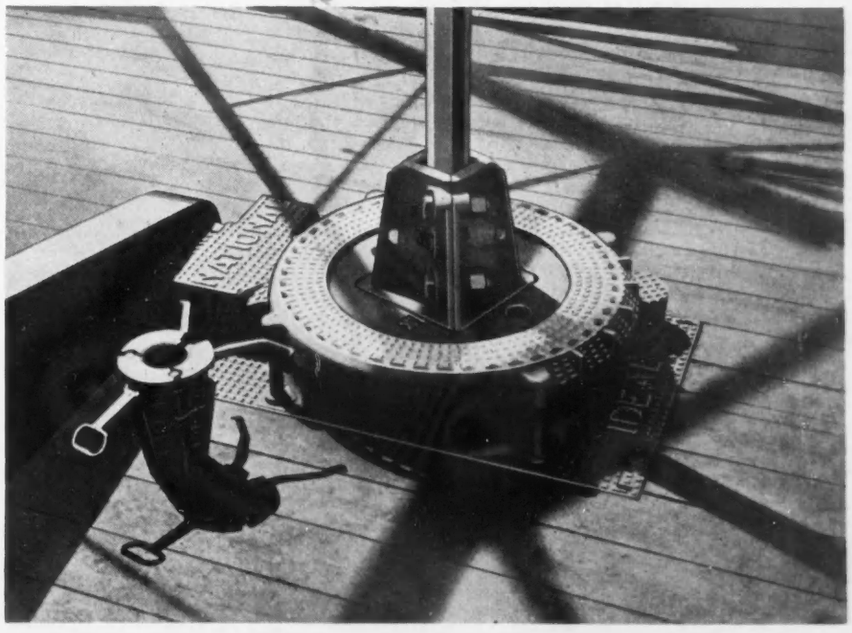
### DRILL STEM DRIVE ATTACHMENT
**The National Supply Company**

A new type of drill stem drive attachment has been recently developed by The National Supply Company. When driving the drill stem, the Type "B" Ideal Drill Stem Attachment (Patented) provides a direct drive between the gear table and the stem, without driving through the table bushing. This design gives a considerably greater driving area between the table and the drill stem bushing, with a corresponding decrease in wear on the bushing's driven faces. The driving faces of the drill stem bushings are extra long—approximately 20 inches—to decrease wear on both the bushing and the drill stem.

The Type "B" split table bushing used in conjunction with the drill stem bushing is designed with a bowl considerably deeper than the usual slip bowl to provide ample backing for extra long drill pipe slips. Several types of drill stem bushings are available to suit the various operators' requirements. The Type "B" drill stem bushing is made of manganese steel and is for use wtih regular square drill stems. The Type "BL" drill stem bushing is a carbon steel bushing with hardened steel liners for driving the drill stem. The use of these renewable liners makes the bushing particularly adaptable for use with either the regular square drill stem, or the octagonal drill stem.

Both the above types of bushings are held together with four 2-inch bolts, which assure correct alignment. Provision for grease gun lubrication of the driving faces is a feature that reduces sliding friction between the bushing and drill stem.

With this attachment the National Supply Company offers the Type "SK" and "BK" improved drill pipe slips for 3-piece hinged construction. The "SK" Slips are for use with average lengths of drill pipe, and the "BK" Slips are for use with extra long strings of pipe. Both types feature



**National Drill Stem Drive Attachment**

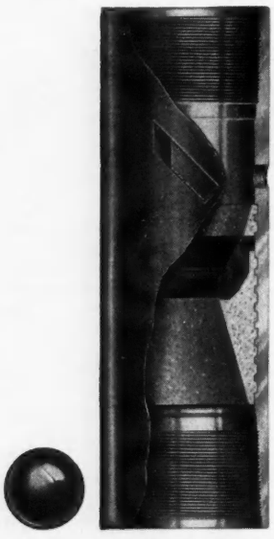
renewable liners, uniform grip on the pipe, uniform seating in the table bushing, and heat treated alloy steel for the liners and bodies.

## CEMENTING EQUIPMENT

**Baker Oil Tools, Inc.**

A new design of float shoe that is particularly adaptable for two-stage cementing and for single cement jobs that require high pressure to put away the cement or to break circulation without putting a strain on the liner or casing has been announced by Baker Oil Tools, Inc., of Huntington Park, California. The new Baker Duplex Cement Wash-Down Whirler Float Shoe provides for the placement of the slurry through tubing or drill pipe. When a second stage of cementing is to be done above the shoe, the new Baker Whirler Bridging Collar is placed in the pipe at the bottom of this upper stage.

**Baker Duplex Cement Wash-down Whirler Float Shoe**



**Baker Whirler Bridging Collar, with Bridging Ball**

The internal mechanism of the Duplex Cement Wash-Down Whirler Float Shoe consists of a concrete plug in which is embedded a ball-type float and back-pressure valve. Leading off from the central fluid passageway through the shoe are ports at the outer end of which are baffles. These baffles direct the flow of fluid or cement slurry in a downward whirling motion. The valve cage extends to the top of the concrete plug and at the top is equipped with left-hand square threads.

Cementing is done through a string of tubing or drill pipe on the bottom of which is a Baker Circulation Joint and Bottom Sub, the latter having left-hand square threads corresponding to those in the Duplex shoe. This cementing string is run in and screwed into the shoe after the liner or casing has been run into the well. Circulation is broken and the cement pumped down the tubing and through the whirler ports in the shoe at any pressure which may be necessary. The cementing string is then unscrewed and removed from the well.

The features of floating, valve efficiency and whirler action are all provided in this shoe. The down-whirler action assists in running casing where bridges or other formation obstructions may interfere and thus eliminates the hazard of sticking. Other types of Duplex Shoes include the Whirler Float Shoe, Cement Float Shoe and Cement Guide Shoe.

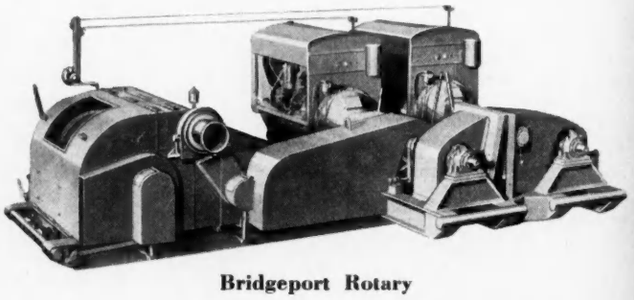
The Baker Whirler Bridging Collar used for the second stage of cementing consists of a whirler collar, below which is a seat for a bridging ball. This seat is made of Bakelite and is embedded in a concrete plug through which is an opening large enough to pass the cementing string used to cement the lower stage. After the cementing string has been withdrawn upon completion of the first stage, a bridging ball is dropped into the liner or casing and seats in the bridging collar. This forms a bridge in the pipe and forces cement then pumped down to pass out the whirler ports in the collar. The cement can be placed by the conventional plug method or through a cement retainer set above the ports when high pressure is required to break circulation or place the cement slurry.

The bridging collar is usually equipped with a Baker Metal "Petal" Basket which prevents dissipation of the cement and protects any perforations below the upper cement job when a producing zone lies between the two cement jobs. Complete details with illustrations showing the application of this equipment can be secured from the manufacturer.

## ROTARY RIG

**Bridgeport Machine Company**

A new rotary drilling rig, known as Series TDL, Model G, manufactured and distributed by The Bridgeport Machine Company, Wichita, Kansas, is meeting favor with operators in localities where quick moves from one location to another are important considerations, the manufacturer says.



**Bridgeport Rotary**

The rig is designed especially for shallow and medium depth drilling, but can be converted at small cost for a wide range of deeper drilling. Utilizing the new Gumbo Buster FC-200 unit draw works with built-in transmission and extended skids on which either one or two engines may be mounted, it eliminates the use of the conventional clutch and rig sub-structure, which materially reduces the cost as well as making it extremely easy to move from one location to another and to rig-up.

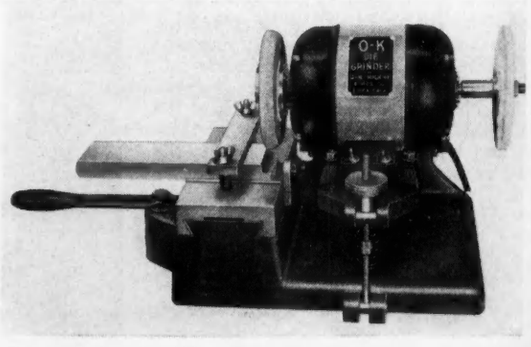
A selection of four speeds on the drumshaft, rotary drive and cathead shaft, at constant engine speed, permits compounding and utilizing the full power of both engines at all times, which makes for maximum flexibility and ease of operation. All speed changes are made with a single operating lever.

It is powered with either gas, gasoline, butane or Diesel engines and is so designed that a separate engine may be used to drive the mud pump, if desired. Complete specifications and details are contained in Rotary Machinery Bulletin No. 39, which may be obtained by addressing the company.

## DIE GRINDER

**O-K Machine and Manufacturing Company**

O-K Machine and Manufacturing Company, Tulsa, announce its new O-K Die Grinder, a precision tool grinder for grinding dies for pipe machines, bolt machines and Toledo, Beaver and Hand Dies. It is a sturdy, compact unit with ample power for heavy die grinding, driven by a half-horsepower motor at 3450 R.P.M. The grinder is equipped with a 6 x ¾-inch wheel for die grinding, also extra wheel for grinding out broken teeth.




**O-K Grinder**

Features of the machine are: adjustment screws for taking up wear on all points; adjustable stops for grinder dies—same thickness and same distance back from point, and a special adapter for grinding Landis dies.

# NEW LIFE FOR OLD AND YOUNG WELLS

**Oil wells—like people—have personalities—all different. Axelson has been studying oil wells for forty-six years—knows all their peculiarities—knows what to do to keep wells in good health—to give them *new* life.**

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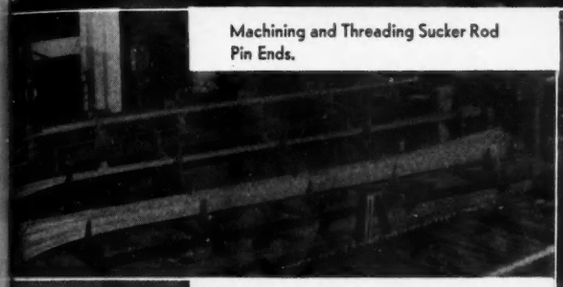
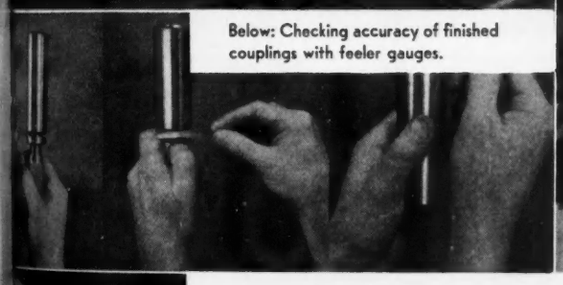
**Remember — Axelson specializes in both Pumps and Sucker Rods — the complete equipment for lifting oil.**

**Manufacturers of oil field supplies and equipment other than Pumps and Sucker Rods consult Axelson for reliable information about oil wells. This information is most valuable to oil production men, and is available without cost or obligation. Obtain *new* life information from Axelson field experts.**

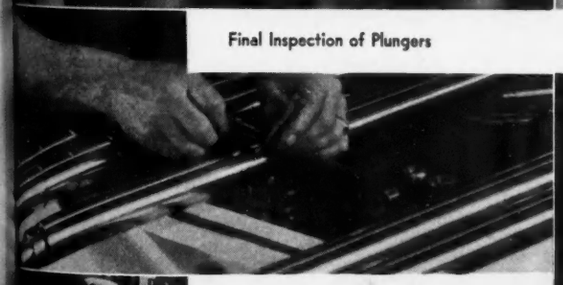


Machining and Threading Sucker Rod Pin Ends.

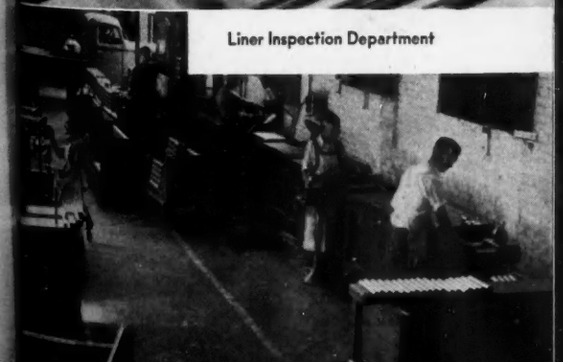


Below: Checking accuracy of finished couplings with feeler gauges.

General View of Liner Department



Final Inspection of Plungers



Liner Inspection Department

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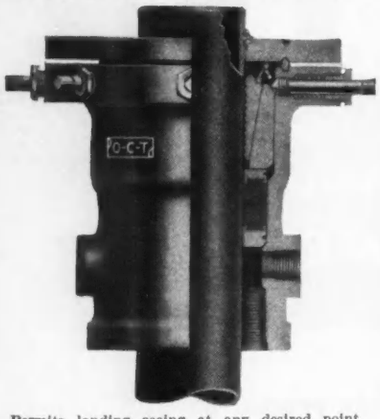
**O - C - T**

TYPE C-9-PS

*SLIP SUSPENSION*

CASING HEAD



Permits landing casing at any desired point. Permits drilling and running casing through blowout preventer equipment flanged above. Packing, slips, and slip bowl passes through blowout preventer to seat in body of head. Packing compressed by weight of casing. Hold-down screws aid in compressing packing. Available with or without welding flange, which holds casing down and effects auxiliary seal above slips. Test pressures up to 10,000 lbs.

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# This Week with the Industry's EQUIPMENT SUPPLIERS

## Youngstown-Republic Supply Buy Emsco Stock Interest

The Youngstown Sheet and Tube Company of Youngstown, Ohio, and The Republic Supply Company of California have acquired a substantial stock interest in Emsco Derrick and Equipment Company of Los Angeles, California, including the purchase from E. M. Smith, former president of the Emsco company, of his holdings therein. It is understood that the E. M. Smith holdings in Emsco represented a majority interest in the stock of the company. Frank Purnell, president of The Youngstown Sheet and Tube Company, has been elected the new president of Emsco Derrick and Equipment Company.

Emsco Derrick and Equipment Company is one of the leading manufacturers of oil well equipment and supplies, having plants in Los Angeles, California, and Houston and Dallas, Texas.

The Continental Supply Company, having branch stores and offices in all producing states except those on the Pacific Coast, has for a number of years been distributor of Emsco products and will continue as such in the area in which it operates. The Continental Supply Company is a subsidiary of The Youngstown Sheet & Tube Company, with general offices in Dallas, Texas.

The Republic Supply Company of California, having stores and offices on the Pacific Coast, will continue as distributor of Emsco products in that area.

The Continental-Emsco Company, a subsidiary of The Continental Supply Company exporting Emsco equipment from New York, will continue in that capacity.

It is the purpose of The Youngstown Sheet and Tube Company and The Republic Supply Company of California by bringing the manufacture and distribution of Emsco products into closer relationship, to serve all interests more effectively.

The negotiations for the purchase of this stock interest were handled by W. J. Morris, president of The Continental Supply Company, and J. A. Crawford, president of The Republic Supply Company of California.

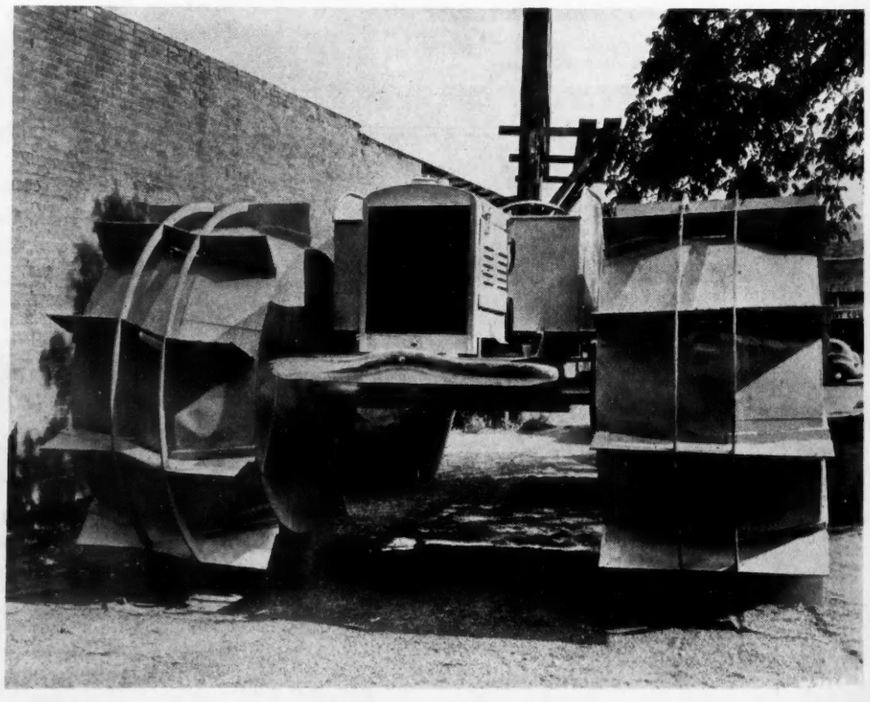
The directors of Emsco Derrick and Equipment Company include: Frank Purnell, W. B. Gillies, W. J. Morris, Frank I. Brinegar, J. A. Crawford, Thos. H. Beament, and W. D. Davidson.

## Late Type of Marsh Buggy Is All-Steel—Even the Tires

Instead of pneumatic rubber tires, the newest "marsh buggy" is built of arc welded steel throughout, even to the tires! The tires are large arc welded steel drums. They are buoyant because of their leak-proof welded construction.

On water, marsh, or highway, the "marsh buggy" is capable of carrying a 6000-pound load. This is possible because the all-welded unit is so constructed that it will both float on water and operate on land.

The complete "buggy" weighs 10,000



**All Welded Marsh Buggy**

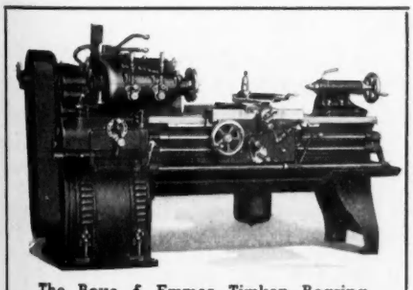
**ROSCOE G. AYERS**

**who recently became sales manager for Bethlehem Supply Corporation at Tulsa.**

pounds and measures 21 feet in length and 15 feet in width overall. The wheels which are 7 feet in diameter and 4 feet wide, are of an air-tight construction making it possible for the unit to float. The entire machine is welded with "Fleetweld" electrode, manufactured by The Lincoln Electric Company, Cleveland, Ohio.

The unit is powered by a Lincoln Zephyr Engine which gives an operating speed of 2 miles per hour in water, 7 miles per hour in marsh and 12 miles per hour on the highway.

This "marsh buggy" was constructed by Stanolind Oil & Gas Company in its Dallas, Texas, shop and is to be used for transportation and exploration work in marshy sections.

The Boye & Emmes Timken Bearing Engine Lathe

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## Iverson Tool Opens Illinois Warehouse

Iverson Tool Company, Tulsa, has opened a warehouse at Salem, Illinois. A complete line of oil well supplies as well as cable and rotary drilling tools are stocked at the new warehouse, and the company maintains a complete fishing tool rental service from this point.

The new store is in charge of Roy E. Busch and the salesmen assisting him are W. A. Clarence, George C. Lively and E. Megenity.

## U. S. Rubber Company Places Representative in Illinois Fields

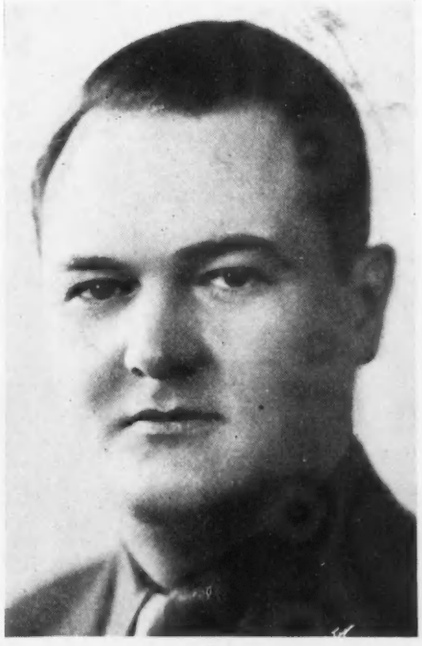
W. M. Ballew, manager mechanical sales, United States Rubber Company, Kansas City Branch, has announced that Hal A. Lundberg, for several years representative in Texas and Oklahoma, will now represent the company in the oil fields of Illinois as well. The Illinois oil fields will be served directly by the branch at St. Louis, Missouri, which is under the management of H. S. McPherson. Complete stocks of U.S. Rubber oil field products will be found in representative oil field supply stores at Clay City, St. Elmo, Centralia, Salem and Fairfield, and all other strategic oil field points.

## Consolidated Asheroft Hancock Repair Center at Tulsa

A new repair center in the Mid-Continent field for Consolidated safety and oil relief valves has just been established at Tulsa, Oklahoma.

This new repair center serving Texas, Oklahoma, Kansas, Arkansas, Louisiana, Mississippi and New Mexico opens on January 2. The southwestern sales office of the Consolidated Ashcroft Hancock Divisions of Manning, Maxwell & Moore, Inc., is also located at this new address, 317 East 4th Street, and opened on December 1.

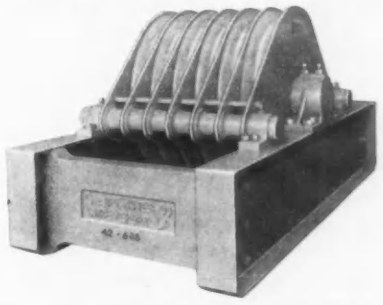
Overnight resetting, repairing and



**VAN D. BENNETT**

**Sales engineer specializing in sub-surface pumping equipment for Bethlehem Supply Corporation.**


**Brewster's New Roller Bearing**
**SIX-IN-LINE BLOCK**



. . . . designed to give your traveling block a center-poise straight fall, and enough strength built in to give it a capacity of more than 400 tons. The manganese steel sheaves are fitted with ample sized roller bearings individually Alemite lubricated. A one-piece safety guard covers the sheaves. Write for prices on this new block and the companion traveling block.

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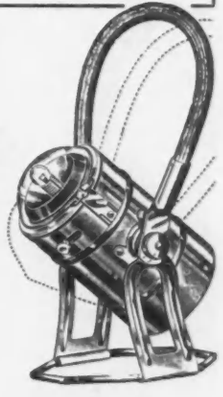

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COMPRESSOR PLANTS POROSITY
BOTTOM HOLE PRESSURE SATURATION
GAS OIL RATIOS RECOVERABLE OIL
CONTROL OF FLOW THRU FORMATION
REGISTERED PROFESSIONAL ENGINEERS

servicing for the Mid-Continent area on Consolidated safety valves, Consolidated oil and relief valves, Ashcroft American recording and indicating pressure gauges and American recording and indicating thermometers are featured.

This new service headquarters is in the charge of Malcolm Black, southwestern sales manager of the Consolidated Ashcroft Hancock Divisions of Manning, Maxwell & Moore, Inc.

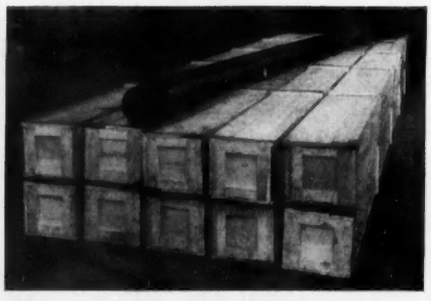
## "New Oil Field Methods" Is Title of New Sound Movie

International Harvester Company has just released a new sound motion picture entitled "New Oil Field Methods." A variety of uses to which modern oil field trucks, tractors and power units are put in drilling wells and producing oil are shown. The film opens with scenes of the recent Tulsa oil show made in exhibits of 14 different manufacturers where International power equipment was displayed. Equipment is then shown on location doing test-hole drilling with a truck-mounted Failing rotary rig, digging slush pits with a TracTracTor and Bucyrus-Erie bull-grader, skidding a 122-foot derrick a mile with four trucks, operating a rotary drilling rig with four International Diesel power units, bringing in a well with a new type of Wilson double-drum winch, cleaning wells by the Beckman reverse circulation method, operating spudders and cable-tool rigs with modern power units, operating various pumping units, servicing wells with a truck-mounted winch, a rubber-tired tractor, and a truck-operated Franks winch, pipe line pumping with batteries of gas-operated engines, and acidizing wells by Chemical Process Company's methods.

The film was prepared especially for showings to oil field producers, schools, colleges, and other interested groups. Prints may be borrowed free of charge by communicating with International Harvester Company, 180 North Michigan Avenue, Chicago.

## Hewitt Rubber Corporation Ships Hose to Persia

Hewitt Rubber Corporation, Buffalo, New York, has recently received an order from Anglo-Aranian Oil Company, Abadon, Persian Gulf, calling for a considerable quantity of smooth bore dock and cargo hose. The company rushes manufacture and shipment of a large quantity of this hose and intends to complete the whole order within the shortest time possible.



**Part shipment of smooth bore dock and cargo hose to Persia by the Hewitt Rubber Corporation.**

## Darling Valve Introduces a Novel Cup Selector

Darling Valve & Manufacturing Company has introduced a novel cup selector which permits the user to select the proper sizes of cups for use in all makes of pumping equipment which are regularly used in the oil fields.

The cup selector is attractively made in dial form. Complete instructions for the use of the selector are incorporated on its face, and the simplicity with which the selector is operated is easily apparent. Sizes of cups are listed consecutively around the outer edge of the center dial of the selector, and the names of various manufacturers and

**Darling Valve Cup Selector**

trade names of the pumps are listed in the panel at the bottom of the dial. It is merely necessary to set the size of the cup in the upper window and in the lower window read the names of the pumps on which this cup may be used. Or, if it is desired to obtain the proper size of cup for use in any pump, the name and size of the pump is set in the lower window and the corresponding size of cup is read in the upper window.

These cup selectors will be furnished without charge by the Darling Valve & Manufacturing Company, of Williamsport, Pennsylvania, upon written request. They will find a ready acceptance, since the selector gives in a very concise form complete information which heretofore has only been available in more complicated form.

## New Specialty Equipment Company Opens at Houston

Advanced Petroleum Equipment Corporation has recently been formed to manufacture and distribute oil field specialties, and has established executive and sales headquarters at 321 M. & M. building, Houston. Stockholders in the new corporation include: J. L. Johnston, who pioneered the Johnston formation testing tool under E. C. Johnston patents; Joe Zeppa, president of Delta Drilling Company; Bob Stacy, vice president of Delta Drilling Company; and E. L. Johnston, R. C. Johnston and Frank Dana, all of whom are executives or division heads of Delta Drilling Company. A new rod hanger and a pressure lubricator, which have been on tests in the field for approximately a year, are now being built, and several other specialties soon will be announced by the company.

# Squeaks from the Bull Wheel

### Potential

"What is the greatest water power known to man?"

"Woman's tears."

### On the Right Track

"That man is going around telling lies about you."

"I don't mind. But I'll break his neck if he begins telling the truth."

### Modern

The young bride was extolling the virtues of her husband to a friend.

"George is just the most generous man in the world," she declared. "He gives me everything credit can buy."

### Last Be First

Pat worked at a factory where they encouraged the staff to think of ideas for the smoother running of the business.

One morning, he was shown into the chairman's office and announced that he had thought of a way of insuring that no one would be late in future.

"That sounds good," said the Chairman. "How do you propose to do it?"

"Sure, that's aisy, sir," said Pat; "the last man in blows the whistle."

### Correct

Where is the elephant found?
It's so big, it's hardly ever lost.

### The New Competition

A man mortgaged his home to buy an automobile. Then he went around and tried to mortgage the car to get money to build a garage.

"How are you going to buy gas?" curiously inquired the man of whom the loan was asked.

"Well," replied the other slowly, "if I own a house, a car and a garage, I should think any dealer would be willing to trust me for gas."

### Not That Bold

"That new couple next door seem to be very devoted. He kisses her every time they meet. Why don't you do that?"

"I don't know her well enough yet."

### Wrong Number

"I called on Mabel last night and I was hardly inside the door before her mother asked me about my intentions."

"That must have been embarrassing."

"Yes. But the worst of it was Mabel called from upstairs and said: 'That isn't the one, Mother!'"

### Boarding House Repartee

Boarder—"This steak is like a cold day in June—very rare."

Landlady—"Yeah, and your bill is like a day in March, very unsettled."

### Slow Motion

What do you charge for extracting a tooth?

$5.

$5 for only two seconds' work?

Well, if you wish, I can extract it very slowly.

### Pen Name

"I'm going to be a writer. What would be a good nom de plume for me?"

"Pig!"

### Limited

I'll bet you say that to all the boys.
Silly! I don't know all the boys.

### Reverse

"Don't you think that horseback riding gives one a headache?"

"No lady, just the reverse."

### Irrelevant

"Have you ever been in trouble before?"

"All I ever did was to rob my kid brother's bank."

"Your honor, he didn't explain that his kid brother is cashier of the Fifth National."

### New Trouble

"When will dad be fit for work again?"

"Can't say for certain, but it will be a long time."

"What makes you think that?"

"'Cause compensation's set in."

### Imports

Did you see much poverty in Europe?

A great deal. In fact, I brought some home with me.

### Careful

"Why are you washing your spoon in the finger bowl?"

"Do you think I want to get egg all over my pocket?"

### Pump Priming

"Is it really healthy out here?"

"Say, we had to shoot a couple of fellows to start a cemetery."

### Of Course!

A rather stout schoolmistress was talking about birds and their habits.

"Now," she said, "at home I have a canary, and it can do something I cannot do. I wonder if any of you know just what that thing is?"

Little Eric raised his hand.

"I know, teacher," he said. "Take a bath in a saucer!"

### Obliging

"Young man, we turn the lights off at 10:30!"

"Oh, boy! that'll be keen."

### Encouraging

"I was out with a nurse, last night."

"Cheer up, maybe your mother will let you go out without her some time."

### Social Etiquette

"What would be the proper thing to say if, in carving the duck, it should skid off the platter and into your neighbor's lap?"

"Be very courteous. Say, 'May I trouble you for that duck?'"

### Tempus Fugit

Sam Watson, a tall, solemn-looking Negro, making his annual trip for his holiday purchases, was a little belated, reaching the city on Christmas Eve.

Having finished his shopping, he was hurrying to the station to catch his waiting train, when he stumbled; a jug fell to the sidewalk with a crash and the precious contents at once became a mere wet place on the concrete.

Sam stood for a moment, dazed by his misfortune. Then, as he turned away from the heart-breaking sight, he said in lugubrious tones: "Dah now! Chris'mus done come—an' gone!"

Gotkool
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& COOLERS
GOTT Water Coolers are the convenient way to keep drinking water handy to the worker, protect it from impurities. Their exclusive construction keeps water cool for long periods. Snug fitting large removable top, handy non-leaking push button faucet. GOTT Water Cans for handy field use. Your Supply Store has them, get one today! . . . .
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KEEP PURE DRINKING WATER ALWAYS HANDY

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